Drinking Water Surveillance Program

NORTH BAY WATER SUPPLY SYSTEM

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NORTH BAY
WATER SUPPLY SYSTEM

DRINKING WATER SURVEILLANCE PROGRAM

ANNUAL REPORT 1989

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EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM

NORTH BAY WATER SUPPLY SYSTEM
1989 ANNUAL REPORT

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. In 1989, 65 plants were being monitored.

The North Bay Water Supply System is a pumping station that adjusts alkalinity, disinfects and fluoridates water from Trout Lake before distribution. This plant serves a population of approximately 50,000 and has a design capacity of 30 x 1000 m^3/day.

Water samples from two distribution sites were taken on a monthly basis and analyzed for the presence of approximately 180 parameters. The raw and treated water at the pumping station was sampled beginning in August. Parameters were divided into the following groups: Bacteriological, Inorganic and Physical(Laboratory Chemistry, Field Chemistry and Metals) and Organics (Chloroaromatics, Pesticides and PCB, Phenolics, Polyaromatic Hydrocarbons and Volatiles). Phenolics and Polyaromatic Hydrocarbons were only analyzed in the raw and treated water.

A summary of results is shown in Table A.

Inorganic and Physical parameters (Laboratory Chemistry, Field Chemistry and Metals) were below any applicable health related ODWOs.

Samples were analyzed monthly for the presence of approximately 110 Organics. Levels did not exceed health related guidelines.

During 1989, the limited DWSP sampling results indicated that the treated water and the distributed water from the North Bay Water Treatment Plant was acceptable in quality.

TABLE A

DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY WTP

SUMMARY TABLE BY SCAN

	SCAN	RAW TESTS	RAW POSITIVE	RAW %POSITIVE	TREATED TESTS	TREATED POSITIVE	TREATED %POSITIVE	SITE 1 TESTS	SITE 1 POSITIVE	SITE 1 %POSITIVE	SITE 2 TESTS	SITE 2 POSITIVE	SITE 2 %POSITIVE	SITE 3 TESTS	SITE 3 POSITIVE	SITE 3 %POSITIVE
	BACTERIOLOGICAL	15	10	66	15	2	13	30	18	60	9	3	33	21	3	14
	CHEMISTRY (FLD)	15	15	100	30	30	100	115	112	97	30	30	100	67	66	98
	CHEMISTRY (LAB)	100	78	78	98	81	82	385	346	89	105	96	91	245	218	88
	METALS	120	41	34	120	43	35	516	242	46	141	63	44	329	132	40
	CHLOROAROMATICS	56	0	0	70	0	0	154	0	0	42	0	0	98	0	0
	PAH	81	0	0	81	0	0	.	.	.	.	.	.	.	.	.
	PESTICIDES & PCB	149	0	0	170	0	0	309	0	0	102	0	0	186	0	0
	PHENOLICS	5	3	60	5	3	60	.	.	.	.	.	.	.	.	.
	SPECIFIC PESTICIDES	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	VOLATILES	145	0	0	145	16	11	319	33	10	87	10	11	203	21	10
TOTAL		690	147		739	175		1839	751		519	202		1156	440	

NO KNOWN HEALTH RELATED GUIDELINES WERE EXCEEDED.

A POSITIVE VALUE DENOTES THAT THE RESULT IS GREATER THAN THE STATISTICAL LIMIT OF DETECTION AND IS QUANTIFIABLE
A '.' INDICATES THAT NO SAMPLE WAS TAKEN

DRINKING WATER SURVEILLANCE PROGRAM

NORTH BAY WATER SUPPLY
1989 ANNUAL REPORT

INTRODUCTION

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. In 1989, 65 plants were being monitored.

The DWSP was initiated on the North Bay Water Supply in March of 1987. Annual Reports were published for 1987 and 1988 (ISSN 0840-5212).

This report contains information and results for 1989.

PLANT DESCRIPTION

The North Bay Water Supply System is a pumping station that adjusts for alkalinity, disinfects and fluoridates water from Trout Lake before di ribution. The pumping station has a design capacity of 30 x 1000 /day and flows on the day of sampling ranging from 26.4 x 1000 m^3/day to 56.8 x 1000 m^3/day. The supply serves approximately 50,000 pec le.

The plant location is shown in Figure 1. General plant information is presented in Table 2.

SAMPLE LOCATIONS

Samples were obtained from five DWSP approved locations;

i) Plant Raw -The water originated from the sluice gate chamber prior to chlorination. Water was sampled through a stainless steel pump and stainless steel sample lines.

ii) Plant Treated - The water originated from the discharge off the Venturi chamber after addition of all treatment chemicals. Water was sampled through stainless steel sample lines.

iii) Distribution System - Site 1 - This house is approximately 1.2 kilometres from the plant. Water was sampled through a copper sample line at the basement laundry tap.

ii) Distribution System - Site 2 - This house is approximately 2.0 kilometres from the plant. Water was sampled through a copper sample line at the kitchen sink tap. Sampling at this site was discontinued in March.

iii) Distribution System - Site 3 - This house is approximately 6 kilometres from the plant. Water was sampled through a copper sample line at the kitchen sink.

Sampling at this site was started in May.

SAMPLING AND ANALYSIS

Sample lines in the plant were flushed prior to sampling to ensure that the water obtained was indicative of its origin and not residual water standing in the sample line.

At all distribution system locations, two types of samples were obtained: a standing and a free flow. The standing sample consisted of water that had been in the household plumbing and service connection for a minimum of six hours. These samples are used to make an assessment of the amount by which the levels of inorganic compounds and metals may be changed on standing due to leaching from (or deposition on) the plumbing system. The only analyses carried out on the standing samples therefore, are General Chemistry and Metals. The free flow sample represented fresh water from the distribution main that had been flowing at the sample tap for five minutes before the sample was taken.

Attempts were made to capture the same block of water at each sampling point by taking the retention time into consideration. The retention time was calculated by dividing the volume of water between the two sampling points by the sample day flow. For example, if it was determined that the retention time within the

FIGURE 1

DRINKING WATER SURVEILLANCE PROGRAM

SITE LOCATION MAP

NORTH BAY WATER TREATMENT PLANT

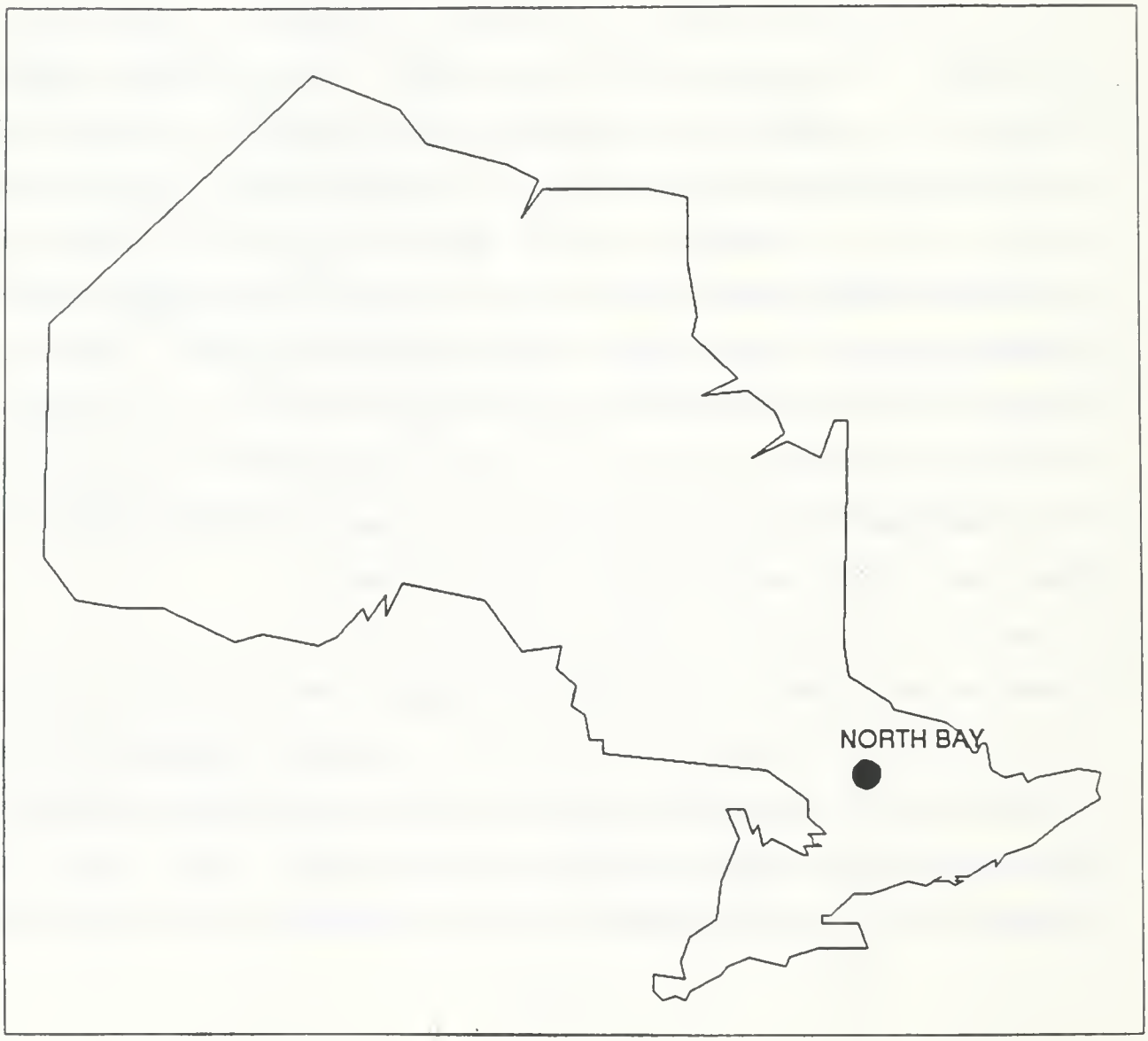

FIGURE 2

NORTH BAY WTP

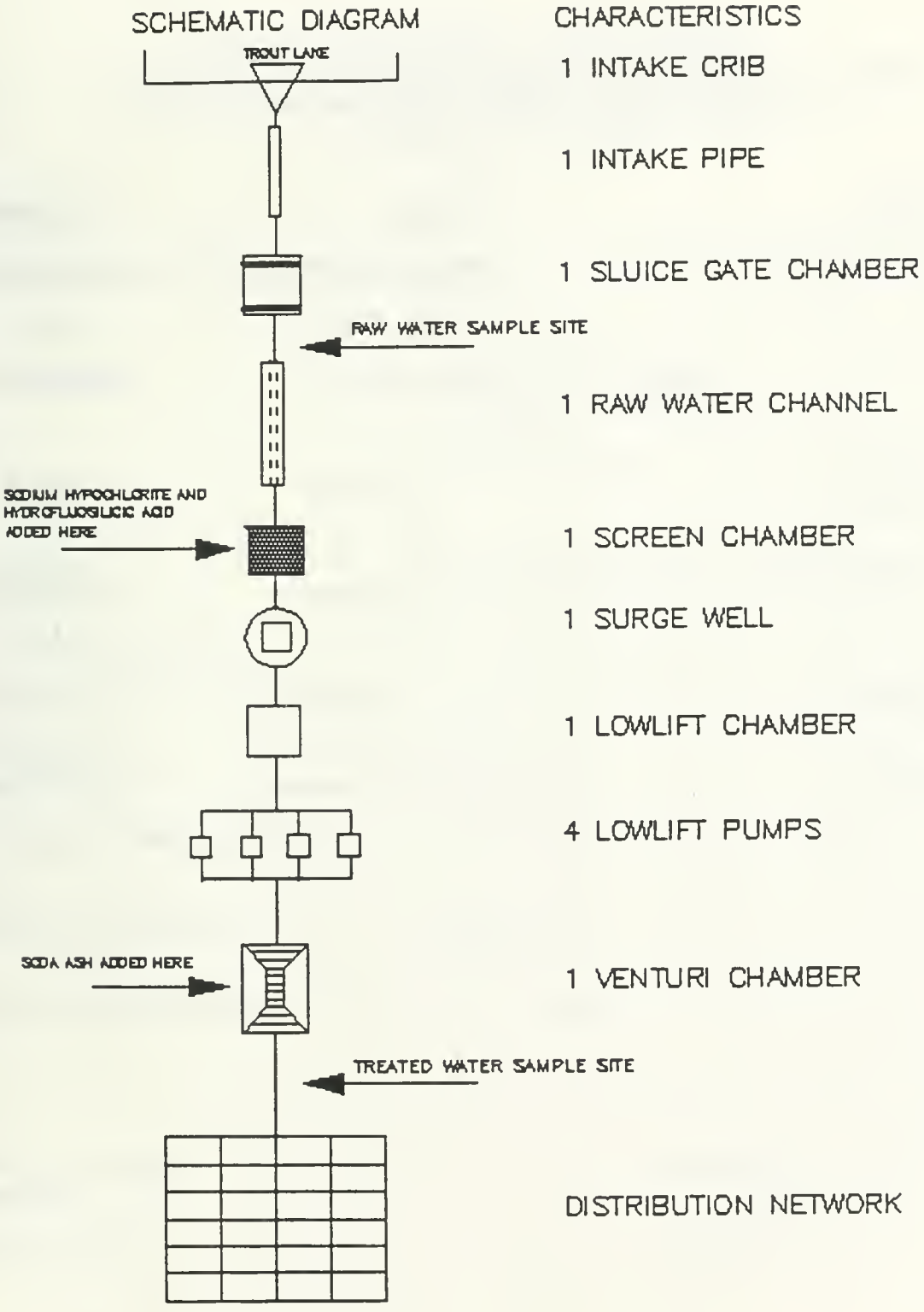

TABLE 1

DRINKING WATER SURVEILLANCE PROGRAM

IN-PLANT MONITORING NORTH BAY WSS 1989

PARAMETER	LOCATION	FREQUENCY
Chlorine Residual - free	Treated Water	continuous
	Treated Water	every 8 hrs
total	Treated Water	every 8 hrs
Fluoride	Treated Water	every 8 hrs
pH	Valve Chamber	continuous
Temperature	Prior to Screens	continuous
Turbidity	Prior to Screens	continuous

TABLE 2

DRINKING WATER SURVEILLANCE PROGRAM ANNUAL REPORT

GENERAL INFORMATION

NORTH BAY WATER SUPPLY SYSTEM

LOCATION:	248 LAKESIDE DRIVE NORTH BAY, ONTARIO P1B 3E3 (705-474-3417)
SOURCE:	RAW WATER SOURCE - TROUT LAKE
DESIGN CAPACITY:	30 (1000 M^3/DAY)
OPERATION:	MUNICIPALITY
PLANT SUPERINTENDENT:	B. WINTON
MINISTRY REGION:	NORTHEAST
DISTRICT OFFICER:	J.R. HARMAR

MUNICIPALITY SERVED	POPULATION
NORTH BAY	50,000

plant was five hours then there would be a five hour interval between the raw and treated sampling. Similarly, if it was estimated that it took approximately one day for the water to travel from the plant to the distribution system site, this site would be sampled one day after the treated water from the plant.

Stringent DWSP sampling protocols were followed to ensure that all samples were taken in a uniform manner.

Plant operating personnel perform analyses on parameters for process parameters (Table 1).

The North Bay Water Supply distribution system was sampled for the presence of approximately 180 parameters on a monthly basis in 1989. The raw and treated water at the pumping station was sampled beginning in August. Phenolics and Polynuclear Aromatic Hydrocarbons were only analyzed in the raw and treated water. Samples were not taken for Specific Pesticide and Chlorophenol analysis. As of August, the analysis of triazine pesticides was dropped in the distribution system. Laboratory analysis was conducted at the Ministry of the Environment facilities in Rexdale, Ontario.

RESULTS

Field Chemistry measurements were recorded on the day of sampling

and were entered on the DWSP data base as submitted by plant personnel.

Table 3 contains information on the sample day retention time, flow rate and treatment chemicals used and their associated dosages.

Table 4 is a summary break-down of the number of water samples analyzed by parameter and by water type. The number of times that a positive or trace result was detected is also reported.

Positive denotes that the result is greater than the statistical limit of detection established by the Ministry of the Environment (MOE) laboratory staff and is quantifiable. Trace (<T) denotes that the level measured is greater than the lowest value detectable by the method but lies so close to the detection limit that it cannot be confidently quantified.

Table 5 presents the results for parameters detected on at least one occasion.

Table 6 lists all parameters analyzed in the DWSP.

Associated guidelines and detection limits are also supplied on tables 5 and 6. Parameters are listed alphabetically within each scan.

DISCUSSION

General

Water quality is judged by comparison with the Ontario Drinking Water Objectives (ODWOs) as defined in the 1984 publication (ISBN 0-7743-8985-0). The Province of Ontario has health related and aesthetic objectives for 49 parameters. These are currently under review. When an ODWO is not available, guidelines/limits from other agencies are consulted. The Parameters Listing System (PALIS), recently published (ISBN 0-7729-4461-X) by the MOE, catalogues and keeps current over 1750 guidelines for 650 parameters from agencies throughout the world.

Many of the compounds detected are naturally occurring or are treatment by-products.

Plant operational personnel address occurrences of taste and odour or biological water quality parameters. The DWSP does not assess these aspects of the water supply.

As stated under Results, traces do not indicate quantifiable values as defined by established MOE Laboratory analytical reporting protocols. While they can be useful in trend analysis or confirmation of the presence of a specific contaminant that is repeatedly detected at these levels, the occasional finding of a trace level of a contaminant is not considered to be significant.

DISCUSSION OF GUIDELINES AND LIMITS THEREFORE, IS ONLY CONDUCTED ON POSITIVE RESULTS.

Bacteriology

Positive results for the Bacteriology scan were present two times in the treated water, eighteen times in the Site 1 water, nine times in the Site 2 water and three times in the Site 3 water. The positive parameters were Standard Plate Count and Total coliform Background.

Standard Plate Count is a test used to supplement routine analysis for Coliform bacteria. The limit for Standard Plate Count (at 35°C after 48 hours) from the ODWOs is 500 organisms/mL based on a geometric mean of 5 or more samples. High Standard Plate Counts were present in the July Site 1 water. While no indicators of unsafe water were detected at this time, the high Standard Plate Count may be indicative of a deterioration in conditions in the distribution system. A total Chlorine Residual of at least 0.05 mg/L was detected in the samples.

Guidelines for bacteriological sampling and testing of a supply are developed to maintain a proper supervision of its bacteriological quality. The routine monitoring program usually requires the taking of multiple samples in a given system. Full interpretation of bacteriological quality cannot be made on the basis of single

samples. Further, bacteriological limits were developed in acknowledgement that the presence of coliforms may be detected due to their non-uniform distribution throughout the distribution system and the fact that their enumeration is subject to considerable variation. Routine bacteriological monitoring, as outlined in the ODWOs, is carried out by the operating authority.

Inorganic and Physical Parameters

Laboratory and Field Chemistry

The results for Laboratory Chemistry and Field Chemistry scans were below applicable health related ODWOs.

Colour values exceeded the aesthetic ODWO of 5 True Colour Units (TCU) in seventeen treated and distribution system free flow waters. Colour in drinking water may be due to the presence of natural or synthetic organic substances as well as certain metallic ions.

The Langelier Index is used extensively in estimating the corrosion potential of water. An increasingly negative index indicates the increasing possibility of corrosion. It is considered sound engineering practice to maintain a slightly positive Langelier Index. Although Table 3 indicates that Sodium Carbonate is added for alkalinity adjustment, the Langelier Index for North Bay is consistently negative.

As part of the treatment plant process, Hydrofluosilicic acid is added to the treated water (Table 3). Where fluoridation is practised, the Fluoride concentration recommended in the ODWO is 1.2 mg/L, plus or minus 0.2 mg/L. This level was generally maintained as can be observed in the Fluoride values in Table 5.

It is desirable that the Temperature of drinking water be less than 15°C. The palatability of water is enhanced by its coolness. A temperature below 15°C will tend to reduce the growth of nuisance organisms and hence minimize associated taste, colour, odour and corrosion problems. The temperature of the delivered water may increase in the distribution system due to the warming effect of the soil in late summer and fall and/or as a result of higher temperatures in the source water. The desired ODWO was exceeded once in the treated water.

Metals

Elevated levels of Copper, Nickel, Lead and Zinc were detected in the standing samples, as compared to the free flow distribution samples, indicating that small quantities of these metals were leached from the household plumbing as the water stood overnight. The Langelier Index indicates that this might be expected.

The Lead levels in the standing sample from Site 1 were high in January, April and September. The Nickel value was also elevated

in January and April. Samples from this location always showed higher levels for these metals in the standing samples than those from Site 2 or Site 3 (indicating the possibility of a lead service connection). The ODWO for lead applies to the free flow sample and not the standing water sample.

At many locations sampled as part of the DWSP, elevated mercury levels have been a result of contamination in the preservative. This problem has since been corrected by using single-use preservatives. The increased mercury levels at Site 1 are a result of this contamination.

Organic

Chloroaromatics

The results of the Chloroaromatics group showed that no Chloroaromatics were detected.

Pesticides and PCB (Polychlorinated Biphenyl)

The results of the Pesticides and PCB scan showed that no PCBs were detected and that two pesticides were detected:

Alpha BHC

Atrazine

There are several isomers of BHC (Benzene Hexachloride). Gamma BHC is the active ingredient of the pesticide Lindane, while alpha BHC

is the isomer most predominantly found in surface waters of the Great Lakes basin as indicated in results from other water supplies on DWSP.

Alpha BHC was detected at trace levels; three times in the raw water, once in the treated water, eight times in the Site 1 water, twice in the Site 2 water and twice in the Site 3 water.

Atrazine was detected at a trace level in one Site 1 water.

Phenolics

The maximum desirable concentration of phenolic substances in drinking water is 2.0 µg/L. This limit has been set primarily to prevent the occurrence of undesirable tastes and odours, particularly in chlorinated water. Phenolics were detected in the raw water, ranging from 1.0 to 4.0 µg/L, and in the treated water, ranging from 1.0 to 5.0 µg/L. Phenolic compounds are present in the aquatic environment as a result of natural and/or industrial processes.

Volatiles

Within the Volatile scan, eight parameters, other than Trihalomethanes (THMs), were detected:

Benzene

Toluene

Ethylbenzene

Meta-Xylene

Ortho-Xylene

Styrene

Carbon Tetrachloride

Tetrachloroethylene

Benzene was detected in the August treated water sample at 0.60 µg/L. The Interim Maximum Acceptable Concentration listed in the Canadian Drinking Water Guidelines (Health and Welfare Canada) for benzene in drinking water is 5.0 µg/L.

The detection of toluene at low, trace levels is a laboratory artifact derived from the analytical methodology.

Ethylbenzene was detected at trace levels; once in the treated water, twice in the Site 1 water, twice in the Site 2 water and once in the Site 3 water.

Meta-Xylene was detected at trace levels; once in the Site 1 water and once in the Site 3 water.

Ortho-Xylene was detected at a trace level; once in the Site 1 water.

The detected trace levels of Styrene are also considered to be laboratory artifacts resulting from the polystyrene shipping

containers. The sporadic background levels from this source are in the order of 0.05 µg/L. The value of 0.65 µg/L reported for the March Site 2 sample was considered by laboratory staff to be unreliable due to suspected contamination as per the remark 'UCS'.

The volatiles listed above are typically found on an occasional basis at other water supplies included on the DWSP, usually at trace levels.

Carbon Tetrachloride was detected at a trace level, in one Site 3 water sample.

Tetrachloroethylene was detected at trace levels, once in the treated water, once in the Site 1 water and twice in the Site 3 water.

THMs are acknowledged to be produced during the water treatment process and will always occur in chlorinated surface waters. THMs are comprised of Chloroform, Chlorodibromomethane and Dichlorobromomethane with Bromoform occurring occasionally. Results are reported for the individual compounds as well as for total THMs.

Chloroform, Chlorodibromomethane, Dichlorobromomethane and Total THMs were always detected in the distributed water. Bromoform was not detected. Total THM occurrences, ranging from 42.8 µg/L to 284

µg/L, were below the ODWO of 350 µg/L.

CONCLUSIONS

Effective treatment should be provided to ensure safety and consistency in the quality of all waters. The current Ministry policy (#15-14-01) requires that all surface waters shall use treatment processes consisting of coagulation-flocculation, filtration (or equivalent) and disinfection. Surface supplies without such treatment are subject to contamination with biological organisms, including algae, protozoa and other organisms that can cause taste and odour and other aesthetic problems in the distributed water and potential health problems eg. giardia and cryptosporidia.

While the parameters measured on DWSP may not have exceeded drinking water guidelines, the water produced cannot be considered to be satisfactory until a treatment process appropriate to the source of the supply is applied (see ODWOs, revised 1983, p7).

Marked increases in copper and lead levels in the standing samples and the consistently negative Langelier Index indicate that the addition of sodium carbonate, at the dosages listed, are not adequate for corrosion control.

During 1989, results from the treated and distributed water from the North Bay Water Supply System indicate that the water quality

was acceptable for those parameters measured.

RECOMMENDATIONS

1) Corrosion control processes should be reviewed.

TABLE 3

DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY WTP SAMPLE DAY CONDITIONS FOR 1989

SAMPLE DAY CONDITIONS			TREATMENT CHEMICAL DOSAGES (MG/L)		
			PRE-CHLORINATION	FLUORIDATION	ALKALINITY ADJUST
			CHLORINE	HYDROFLUOSILICIC ACID	SODIUM CARBONATE
DATE	DELAY* TIME(HRS)	FLOW (1000M3)			
JAN 24	.2	26.7	1.95	1.27	6.37
FEB 28	.	.	1.74	1.18	7.57
MAR 28	.2	27.9	1.90	1.20	9.15
APR 25	.2	26.2	2.12	1.09	6.66
MAY 18	.2	33.4	2.00	1.30	7.25
JUL 18	.2	56.8	2.16	1.43	8.50
AUG 29	.1	30.8	2.01	1.20	9.44
SEP 21	.1	30.0	2.10	1.20	9.38
OCT 24	.2	27.6	2.09	1.13	5.39
NOV 28	.2	27.6	1.52	1.20	5.13
DEC 19	.2	29.7	1.90	1.15	4.00

* THE DELAY TIME BETWEEN THE RAW AND TREATED WATER SAMPLING, SHOULD ESTIMATE THE RETENTION TIME.

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY

SUMMARY TABLE OF RESULTS (1989)

		RAW			TREATED			SITE 1			SITE 2			SITE 3		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
BACTERIOLOGICAL	FECAL COLIFORM MF	5	1	0	.	.	.	.	.	.	.	.	.	.	.	.
	STANDRD PLATE CNT MF	.	.	.	5	1	0	10	9	0	3	2	0	7	1	0
	TOTAL COLIFORM MF	5	4	0	5	0	0	10	2	0	3	0	0	7	0	0
	T COLIFORM BCKGRD MF	5	5	0	5	1	0	10	7	0	3	1	0	7	2	0
*TOTAL SCAN BACTERIOLOGICAL		15	10	0	15	2	0	30	18	0	9	3	0	21	3	0
*TOTAL GROUP BACTERIOLOGICAL		15	10	0	15	2	0	30	18	0	9	3	0	21	3	0
CHEMISTRY (FLD)	FLD CHLORINE (COMB)	.	.	.	5	5	0	21	19	0	6	6	0	12	11	0
	FLD CHLORINE FREE	.	.	.	5	5	0	22	21	0	6	6	0	14	14	0
	FLD CHLORINE (TOTAL)	.	.	.	5	5	0	22	22	0	6	6	0	14	14	0
	FLD PH	5	5	0	5	5	0	22	22	0	6	6	0	14	14	0
	FLD TEMPERATURE	5	5	0	5	5	0	22	22	0	6	6	0	13	13	0
	FLD TURBIDITY	5	5	0	5	5	0	6	6	0	.	.	.	.	.	.
*TOTAL SCAN CHEMISTRY (FLD)		15	15	0	30	30	0	115	112	0	30	30	0	67	66	0
CHEMISTRY (LAB)	ALKALINITY	5	5	0	5	5	0	22	22	0	6	6	0	14	14	0
	CALCIUM	5	5	0	5	5	0	22	22	0	6	6	0	14	14	0
	CYANIDE	5	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	CHLORIDE	5	5	0	5	5	0	22	22	0	6	6	0	14	14	0
	COLOUR	5	5	0	5	5	0	22	22	0	6	6	0	14	14	0
	CONDUCTIVITY	5	5	0	5	5	0	22	22	0	6	6	0	14	14	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY

SUMMARY TABLE OF RESULTS (1989)

		SITE														
		RAW			TREATED			SITE 1			SITE 2			SITE 3		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
CHEMISTRY (LAB)	FLUORIDE	5	5	0	5	5	0	22	22	0	6	6	0	14	14	0
	HARDNESS	5	5	0	5	5	0	22	22	0	6	6	0	14	14	0
	IONCAL	5	5	0	5	5	0	22	22	0	6	6	0	14	14	0
	LANGELIERS INDEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MAGNESIUM	5	5	0	5	5	0	22	22	0	6	6	0	14	14	0
	SODIUM	5	5	0	5	5	0	22	22	0	6	6	0	14	14	0
	AMMONIUM TOTAL	5	1	3	5	0	2	22	9	6	6	3	2	14	3	6
	NITRITE	5	2	3	5	2	2	22	7	15	6	3	3	14	5	9
	TOTAL NITRATES	5	5	0	5	5	0	22	22	0	6	6	0	14	14	0
	NITROGEN TOT KJELD	5	5	0	5	5	0	22	22	0	6	6	0	14	14	0
	PH	5	5	0	5	5	0	22	22	0	6	6	0	14	14	0
	PHOSPHORUS FIL REACT	5	0	0	4	2	1	.	.	.	.	.	.	.	.	.
	PHOSPHORUS TOTAL	5	0	5	4	2	2	.	.	.	.	.	.	.	.	.
	SULPHATE	5	5	0	5	5	0	22	22	0	6	6	0	14	14	0
	TURBIDITY	5	5	0	5	5	0	22	22	0	6	6	0	14	14	0
*TOTAL SCAN CHEMISTRY (LAB)		100	78	11	98	81	7	385	346	21	105	96	5	245	218	15
METALS	SILVER	5	0	1	5	0	0	22	1	11	6	0	3	14	0	2
	ALUMINUM	5	5	0	5	5	0	22	22	0	6	6	0	14	14	0
	ARSENIC	5	0	4	5	0	5	22	1	21	6	0	6	14	0	14
	BARIUM	5	5	0	5	5	0	22	22	0	6	6	0	14	14	0
	BORON	5	0	5	5	0	5	22	3	19	6	0	6	14	0	14
	BERYLLIUM	5	0	1	5	0	2	22	0	5	6	0	2	14	0	3

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY

SUMMARY TABLE OF RESULTS (1989)

		SITE														
		RAW			TREATED			SITE 1			SITE 2			SITE 3		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
METALS	CADMIUM	5	0	1	5	0	1	22	1	8	6	0	3	14	0	7
	COBALT	5	0	5	5	1	4	22	0	22	6	0	6	14	0	14
	CHROMIUM	5	0	3	5	0	3	22	7	8	6	1	2	14	2	8
	COPPER	5	4	1	5	4	1	22	22	0	6	6	0	14	14	0
	IRON	5	0	5	5	0	5	22	19	1	6	6	0	14	2	11
	MERCURY	5	1	2	5	0	3	10	8	2	3	3	0	7	2	2
	MANGANESE	5	5	0	5	5	0	22	20	0	6	6	0	14	13	1
	MOLYBDENUM	5	0	5	5	0	4	22	0	20	6	0	4	14	1	10
	NICKEL	5	0	5	5	0	5	22	10	11	6	3	3	14	4	10
	LEAD	5	2	2	5	2	2	22	22	0	6	6	0	14	14	0
	ANTIMONY	5	4	1	5	5	0	22	22	0	6	6	0	14	12	2
	SELENIUM	5	0	1	5	0	0	22	0	13	6	0	6	14	0	2
	STRONTIUM	5	5	0	5	5	0	22	22	0	6	6	0	14	14	0
	TITANIUM	5	5	0	5	5	0	22	16	6	6	2	4	14	12	2
	THALLIUM	5	0	2	5	1	1	22	2	8	6	0	0	14	0	5
	URANIUM	5	0	2	5	0	0	22	0	11	6	0	3	14	0	7
	VANADIUM	5	0	5	5	0	5	22	0	14	6	0	0	14	0	13
	ZINC	5	5	0	5	5	0	22	22	0	6	6	0	14	14	0
*TOTAL SCAN METALS		120	41	51	120	43	46	516	242	180	141	63	48	329	132	127
*TOTAL GROUP INORGANIC & PHYSICAL		235	134	62	248	154	53	1016	700	201	276	189	53	641	416	142
CHLOROAROMATICS	HEXACHLOROBUTADIENE	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	123 TRICHLOROBENZENE	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY

SUMMARY TABLE OF RESULTS (1989)

		SITE															
		RAW			TREATED			SITE 1			SITE 2			SITE 3			
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	
CHLOROAROMATICS	1234 T-CHLOROBENZENE	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0	
	1235 T-CHLOROBENZENE	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0	
	124 TRICHLOROBENZENE	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0	
	1245 T-CHLOROBENZENE	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0	
	135 TRICHLOROBENZENE	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0	
	HCB	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0	
	HEXACHLOROETHANE	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0	
	OCTACHLOROSTYRENE	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0	
	PENTACHLOROBENZENE	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0	
	236 TRICHLOROTOLUENE	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0	
	245 TRICHLOROTOLUENE	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0	
	26A TRICHLOROTOLUENE	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0	
*TOTAL SCAN CHLOROAROMATICS		56	0	0	70	0	0	154	0	0	42	0	0	98	0	0	
PAH	PHENANTHRENE	5	0	0	5	0	0	.	.	.	.	.	.	.	.	.	
	ANTHRACENE	5	0	0	5	0	0	.	.	.	.	.	.	.	.	.	
	FLUORANTHENE	5	0	0	5	0	0	.	.	.	.	.	.	.	.	.	
	PYRENE	5	0	0	5	0	0	.	.	.	.	.	.	.	.	.	
	BENZO(A)ANTHRACENE	5	0	0	5	0	0	.	.	.	.	.	.	.	.	.	
	CHRYSENE	5	0	0	5	0	0	.	.	.	.	.	.	.	.	.	
	DIMETH. BENZ(A)ANTHR	3	0	0	3	0	0	.	.	.	.	.	.	.	.	.	
	BENZO(E) PYRENE	5	0	0	5	0	0	.	.	.	.	.	.	.	.	.	
	BENZO(B) FLUORANTHEN	5	0	0	5	0	0	.	.	.	.	.	.	.	.	.	

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE	SITE 3 TOTAL	SITE 3 POSITIVE	SITE 3 TRACE
PAH	PERYLENE	5	0	0	5	0	0	.	.	.	.	.	.	.	.	.
	BENZO(K) FLUORANTHEN	5	0	0	5	0	0	.	.	.	.	.	.	.	.	.
	BENZO(A) PYRENE	3	0	0	3	0	0	.	.	.	.	.	.	.	.	.
	BENZO(G,H,I) PERYLEN	5	0	0	5	0	0	.	.	.	.	.	.	.	.	.
	DIBENZO(A,H) ANTHRAC	5	0	0	5	0	0	.	.	.	.	.	.	.	.	.
	INDENO(1,2,3-C,D) PY	5	0	0	5	0	0	.	.	.	.	.	.	.	.	.
	BENZO(B) CHRYSENE	5	0	0	5	0	0	.	.	.	.	.	.	.	.	.
	CORONENE	5	0	0	5	0	0	.	.	.	.	.	.	.	.	.
*TOTAL SCAN PAH		81	0	0	81	0	0	0	0	0	0	0	0	0	0	0
PESTICIDES & PCB	ALDRIN	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	ALPHA BHC	4	0	3	5	0	1	11	0	8	3	0	2	7	0	2
	BETA BHC	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	LINDANE	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	ALPHA CHLORDANE	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	GAMMA CHLORDANE	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	DIELDRIN	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	METHOXYCHLOR	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	ENDOSULFAN 1	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	ENDOSULFAN II	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	ENDRIN	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	ENDOSULFAN SULPHATE	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	HEPTACHLOR EPOXIDE	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE	SITE 3 TOTAL	SITE 3 POSITIVE	SITE 3 TRACE
PESTICIDES & PCB	HEPTACHLOR	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	MIREX	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	OXYCHLORDANE	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	OPDDT	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	PCB	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	DDD	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	PPDDE	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	PPDDT	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	AMETRINE	5	0	0	5	0	0	6	0	0	3	0	0	3	0	0
	ATRAZINE	5	0	0	5	0	0	6	0	1	3	0	0	3	0	0
	ATRATONE	5	0	0	5	0	0	6	0	0	3	0	0	3	0	0
	CYANAZINE (BLADEX)	5	0	0	5	0	0	6	0	0	3	0	0	3	0	0
	D-ETHYL ATRAZINE	5	0	0	5	0	0	6	0	0	3	0	0	3	0	0
	D-ETHYL SIMAZINE	5	0	0	5	0	0	6	0	0	3	0	0	3	0	0
	PROMETONE	5	0	0	5	0	0	6	0	0	3	0	0	3	0	0
	PROPAZINE	5	0	0	5	0	0	6	0	0	3	0	0	3	0	0
	PROMETRYNE	5	0	0	5	0	0	6	0	0	3	0	0	3	0	0
	METRIBUZIN (SENCOR)	5	0	0	5	0	0	6	0	0	3	0	0	3	0	0
	SIMAZINE	5	0	0	5	0	0	6	0	0	3	0	0	3	0	0
	ALACHLOR (LASSO)	5	0	0	5	0	0	6	0	0	3	0	0	3	0	0
	METOLACHLOR	5	0	0	5	0	0	6	0	0	3	0	0	3	0	0
*TOTAL SCAN PESTICIDES & PCB		149	0	3	170	0	1	309	0	9	102	0	2	186	0	2
PHENOLICS	PHENOLICS	5	3	2	5	3	2	.	.	.	.	.	.	.	.	.

TABLE 4

ORINKING WATER SURVEILLANCE PROGRAM NORTH BAY

SUMMARY TABLE OF RESULTS (1989)

		SITE														
		RAW			TREATED			SITE 1			SITE 2			SITE 3		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
*TOTAL SCAN PHENOLICS		5	3	2	5	3	2	0	0	0	0	0	0	0	0	0
SPECIFIC PESTICIDES	TOXAPHENE	4	0	0	5	0	0	11	0	0	3	0	0	7	0	0
*TOTAL SCAN SPECIFIC PESTICIDES		4	0	0	5	0	0	11	0	0	3	0	0	7	0	0
VOLATILES	BENZENE	5	0	0	5	1	1	11	0	0	3	0	0	7	0	0
	TOLUENE	5	0	0	5	0	2	11	0	3	3	0	2	7	0	2
	ETHYLBENZENE	5	0	0	5	0	1	11	0	2	3	0	2	7	0	1
	P-XYLENE	5	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	M-XYLENE	5	0	0	5	0	0	11	0	1	3	0	0	7	0	1
	O-XYLENE	5	0	0	5	0	0	11	0	1	3	0	0	7	0	0
	STYRENE	5	0	1	5	0	2	11	0	8	3	1	2	7	0	7
	1,1 DICHLOROETHYLENE	5	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	METHYLENE CHLORIDE	5	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	T1,2DICHLOROETHYLENE	5	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	1,1 DICHLOROETHANE	5	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	CHLOROFORM	5	0	0	5	5	0	11	11	0	3	3	0	7	7	0
	111, TRICHLOROETHANE	5	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	1,2 DICHLOROETHANE	5	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	CARBON TETRACHLORIDE	5	0	0	5	0	0	11	0	0	3	0	0	7	0	1
	1,2 DICHLOROPROPANE	5	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	TRICHLOROETHYLENE	5	0	0	5	0	0	11	0	0	3	0	0	7	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE	SITE 3 TOTAL	SITE 3 POSITIVE	SITE 3 TRACE
VOLATILES	DICHLOROBROMOMETHANE	5	0	0	5	5	0	11	11	0	3	3	0	7	7	0
	112 TRICHLOROETHANE	5	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	CHLORODIBROMOMETHANE	5	0	0	5	0	5	11	0	9	3	0	3	7	0	6
	T-CHLOROETHYLENE	5	0	0	5	0	1	11	0	1	3	0	0	7	0	2
	BROMOFORM	5	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	1122 T-CHLOROETHANE	5	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	CHLOROBENZENE	5	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	1,4 DICHLOROBENZENE	5	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	1,3 DICHLOROBENZENE	5	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	1,2 DICHLOROBENZENE	5	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	ETHLYENE DIBROMIDE	5	0	0	5	0	0	11	0	0	3	0	0	7	0	0
	TOTL TRIHALOMETHANES	5	0	0	5	5	0	11	11	0	3	3	0	7	7	0
*TOTAL SCAN VOLATILES		145	0	1	145	16	12	319	33	25	87	10	9	203	21	20
*TOTAL GROUP ORGANIC		440	3	6	476	19	15	793	33	34	234	10	11	494	21	22
TOTAL		690	147	68	739	175	68	1839	751	235	519	202	64	1156	440	164

KEY TO TABLE 5 and 6

A ONTARIO DRINKING WATER OBJECTIVES (ODWO)
1. Maximum Acceptable Concentration (MAC)
1+. MAC for Total Trihalomethanes
1*. MAC for Bacteriological Analyses
Poor water quality is indicated when :
- total coliform counts > 0 < 5
- P/A Bottle Test is present after 48 hours
- Aeromonas organisms are detected in more than 25% of samples in a single submission or in successive submissions from the same sampling site
- Pseudomonas Aeruginosa, Staphylococcus Aureus and members of the Fecal Streptococcus group should not be detected in any sample
- Standard Plate Count should not exceed 500 organisms per ml at 35 ^{0}C within 48 hours

2. Interim Maximum Acceptable Concentration (IMAC)
3. Maximum Desirable Concentration (MDC)
4. Aesthetic or Recommended Operational Guideline
- hardness levels between 80 and 100 mg/L as calcium carbonate are considered to provide an acceptable balance between corrosion and incrustation, water supplies with a hardness >200 mg/L are considered poor and those in excess of 500 mg/L are unacceptable.

B HEALTH & WELFARE CANADA (H&W)
1. Maximum Acceptable Concentration (MAC)
2. Proposed MAC
3. Interim MAC
4. Aesthetic Objective (AO) (for xylenes, a total)

C WORLD HEALTH ORGANIZATION (WHO)
1. Guideline Value (GV)
2. Tentative GV
3. Aesthetic GV

D US ENVIRONMENTAL PROTECTION AGENCY (EPA)
1. Maximum Contaminant Level (MCL)
2. Suggested No-Adverse Effect Level (SNAEL)
3. Lifetime Health Advisory
4. EPA Ambient Water Quality Criteria
5. Maximum Contaminant Level Goal (MCLG)

F EUROPEAN ECONOMIC COMMUNITY (EEC)
1. Health Related Guideline Level
2. Aesthetic Guideline Level
3. Maximum Admissable Concentration (MADC)

G CALIFORNIA STATE DEPARTMENT OF HEALTH-GUIDELINE VALUE

H USSR MAXIMUM PERMISSIBLE CONCENTRATION

I NEW YORK STATE AMBIENT WATER GUIDELINE

N/A NONE AVAILABLE

INTERPRETATION OF DATA

The interpretation of analytical results that are obtained from measurements near the limit of detection of the measurement process is subject to greater uncertainty than those at higher concentrations. The principle areas of concern relate to whether the substance has actually been detected, whether it has been properly identified, and whether it is an artifact of the measurement process. In other words, false positives can be caused by the instrumentation or the test procedures used, when in fact these compounds are not present in the sample.

There are several methods to treat data from such measurements:
1. Exclude the low-level data because of this uncertainty factor. Studies of long-term environmental trends and modelling may however, be adversely affected by the exclusion of such data.
2. Qualify these data so the user is aware of the greater uncertainty associated with their use.

For the Drinking Water Surveillance Program, measurements near the limit of detection of the measurement process are reported with the code "<T". Results qualified by "W" indicate a zero measurement. These results are reported for purposes of modelling and long-term trend analysis and no significance should be attributed to a single determination of a substance below "T" (a single determination may well be a false positive). Repeat analysis or additional data are needed before it can be stated with certainty that the substance in question was truly present. On the other hand, it is less likely that repeated detection of a substance at or near the limit of detection at a specific location is solely due to an artifact in the measurement system, and more likely represents a true positive. The average of such data however, is still only an estimate of the amount of substance present subject to the possible biases of the method used.

LABORATORY RESULTS, REMARK DESCRIPTIONS

.	No Sample Taken
BDL	Below Minimum Measurable Amount
<T	Greater Than Detection Limit But Not Confident (SEE INTERPRETATION OF RESULTS ABOVE)
>	Results Are Greater Than The Upper Limit
<=>	Approximate Result
!CS	No Data: Contamination Suspected
!IL	No Data: Sample Incorrectly Labelled
!IS	No Data: Insufficient Sample
!IV	No Data: Inverted Septum
!LA	No Data: Laboratory Accident
!LD	No Data: Test Queued After Sample Discarded

!LA	No Data: Laboratory Accident
!LD	No Data: Test Queued After Sample Discarded
!NA	No Data: No Authorization To Perform Reanalysis
!NP	No Data: No Procedure
!NR	No Data: Sample Not Received
!OP	No Data: Obscured Plate
!QU	No Data: Quality Control Unacceptable
!PE	No Data: Procedural Error - Sample Discarded
!PH	No Data: Sample pH Outside Valid Range
!RE	No Data: Received Empty
!RO	No Data: See Attached Report (no numeric results)
!SM	No Data: Sample Missing
!SS	No Data: Send Separate Sample Properly Preserved
!UI	No Data: Indeterminant Interference
!TX	No Data: Time Expired
A3C	Approximate, Total Count Exceeded 300 Colonies
APL	Additional Peak, Large, Not Priority Pollutant
APS	Additional Peak, Less Than, Not Priority Pollutant
CIC	Possible Contamination, Improper Cap
CRO	Calculated Result Only
PPS	Test Performed On Preserved Sample
RMP	P and M-Xylene Not Separated
RRV	Rerun Verification
RVU	Reported Value Unusual
SPS	Several Peaks, Small, Not Priority Pollutant
UCR	Unreliable: Could Not Confirm By Reanalysis
UCS	Unreliable: Contamination Suspected
UIN	Unreliable: Indeterminant Interference
XP	Positive After X Number of Hours
T# (T06)	Result Taken After # Hours

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
BACTERIOLOGICAL								
FECAL COLIFORM MF (CT/100ML)			DET'N LIMIT = 0		GUIDELINE = 0 (A1)			
AUG	0	.	.	.	.	.	.	.
SEP	0	.	.	.	.	.	.	.
OCT	1	.	.	.	.	.	.	.
NOV	0	.	.	.	.	.	.	.
DEC	0	.	.	.	.	.	.	.
STANDARD PLATE CNT MF(CT/ML)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	.	47 T24	.	2 <=>	.	.
FEB	.	.	.	75 T24	.	10 T24	.	.
MAR	.	.	.	23 T24	.	29 T24	.	.
APR	.	.	.	7 <=>	.	.	.	.
MAY	.	.	.	46	.	.	.	47
JUN	.	.	.	.	.	.	.	0 <=>
JUL	.	.	.	700 A3C	.	.	.	3 <=>
AUG	.	1 <=>	.	ICS	.	.	.	2 <=>
SEP	.	6 <=>	.	25	.	.	.	.
OCT	.	6 <=>	.	740	.	.	.	1 <=>
NOV	.	20	.	170	.	.	.	5 <=>
DEC	.	1 <=>	.	42	.	.	.	1 <=>
TOTAL COLIFORM MF (CT/100ML)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	.	0 T24	.	0 T24	.	.
FEB	.	.	.	0 T24	.	0 T24	.	.
MAR	.	.	.	0 T24	.	0 T24	.	.
APR	.	.	.	0	.	.	.	.
MAY	.	.	.	0	.	.	.	0
JUN	.	.	.	.	.	.	.	0
JUL	.	.	.	0 A3C	.	.	.	0
AUG	BDL	0	.	ICS	.	.	.	0
SEP	2 A3C	0	.	2	.	.	.	.
OCT	76 A3C	0	.	1 A3C	.	.	.	0
NOV	32	0	.	0	.	.	.	0
DEC	20	0	.	0	.	.	.	0

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
T COLIFORM BCKGRO MF (CT/100ML)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	.	5 T24	.	2 T24	.	.
FEB	.	.	.	0 T24	.	0 T24	.	.
MAR	.	.	.	162 T24	.	0 T24	.	.
APR	.	.	.	0	.	.	.	.
MAY	.	.	.	5	.	.	.	111
JUN	.	.	.	.	.	.	.	0
JUL	.	.	.	1200	.	.	.	0
AUG	4800 >	0	.	TCS	.	.	.	0
SEP	2600 A3C	0	.	92	.	.	.	.
OCT	1400 A3C	3	.	2400 >	.	.	.	160
NOV	122	0	.	270	.	.	.	0
DEC	80	0	.	0	.	.	.	0

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
CHEMISTRY (FLO)								
FLD CHLORINE (COMB) (MG/L)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	.200	.200	.100	.200	.	.
FEB	.	.	.200	.200	.100	.200	.	.
MAR	.	.	.150	.100	.200	.100	.	.
APR	.	.	.050	.050	.	.	.	.
MAY	.	.	.050	.	.	.	.	.
JUN	.	.	.	.	.	.	.300	.300
JUL	.	.	.200	.200	.	.	.100	.100
AUG	.	.100	.100	.100	.	.	.300	.300
SEP	.	.100	.050	.080	.	.	.	.
OCT	.	.050	.000	.050	.	.	.000	.100
NOV	.	.330	.050	.050	.	.	.200	.200
DEC	.	.210	.000	.050	.	.	.200	.200
FLD CHLORINE FREE (MG/L)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	.100	.150	.100	.100	.	.
FEB	.	.	.100	.150	.100	.100	.	.
MAR	.	.	.150	.200	.100	.100	.	.
APR	.	.	.100	.100	.	.	.	.
MAY	.	.	.250	.300	.	.	.100	.100
JUN	.	.	.	.	.	.	.200	.300
JUL	.	.	.000	.100	.	.	.100	.200
AUG	.	.550	.100	.200	.	.	.200	.200
SEP	.	.550	.200	.220	.	.	.	.
OCT	.	.950	.100	.150	.	.	.200	.200
NOV	.	.320	.100	.150	.	.	.100	.200
DEC	.	.450	.150	.150	.	.	.200	.200
FLD CHLORINE (TOTAL) (MG/L)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	.300	.350	.200	.300	.	.
FEB	.	.	.300	.350	.200	.300	.	.
MAR	.	.	.300	.300	.300	.200	.	.
APR	.	.	.150	.150	.	.	.	.
MAY	.	.	.300	.300	.	.	.100	.100
JUN	.	.	.	.	.	.	.600	.600
JUL	.	.	.200	.300	.	.	.200	.300
AUG	.	.650	.200	.300	.	.	.500	.500
SEP	.	.650	.250	.300	.	.	.	.
OCT	.	1.000	.100	.700	.	.	.200	.300
NOV	.	.650	.150	.200	.	.	.300	.400
DEC	.	.660	.150	.200	.	.	.400	.400

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
FLD PH (DMNSLESS)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	7.200	7.200	6.800	7.000	.	.
FEB	.	.	7.200	7.200	7.000	7.200	.	.
MAR	.	.	7.200	7.200	7.000	7.000	.	.
APR	.	.	7.000	7.000	.	.	.	.
MAY	.	.	7.200	7.200	.	.	7.000	7.000
JUN	.	.	.	.	.	.	7.000	7.000
JUL	.	.	7.200	7.200	.	.	7.200	7.000
AUG	6.600	7.200	7.200	7.200	.	.	7.200	7.200
SEP	6.720	7.200	7.200	7.200	.	.	.	.
OCT	7.000	7.290	7.200	7.000	.	.	6.800	7.200
NOV	7.060	7.250	7.050	7.150	.	.	7.200	7.200
DEC	7.100	7.200	7.200	7.200	.	.	6.800	7.200
FLD TEMPERATURE (DEG. C)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	18.000	6.000	7.000	4.000	.	.
FEB	.	.	15.000	4.000	9.000	4.000	.	.
MAR	.	.	18.000	.600	9.000	4.000	.	.
APR	.	.	16.500	5.000	.	.	.	.
MAY	.	.	16.000	6.000	.	.	10.000	7.000
JUN	.	.	.	.	.	.	13.000	9.000
JUL	.	.	17.000	11.000	.	.	14.000	11.000
AUG	9.000	9.000	17.000	10.000	.	.	16.000	10.000
SEP	6.100	7.000	17.000	19.000	.	.	.	.
OCT	8.300	8.300	16.000	11.000	.	.	12.000	10.000
NOV	3.300	3.300	16.000	8.000	.	.	11.000	6.000
DEC	2.200	2.200	16.000	8.000	.	.	.	5.000
FLD TURBIDITY (FTU)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	.400	.400	.	.	.	.
FEB	.	.	.600	.600	.	.	.	.
MAR	.	.	.	.540	.	.	.	.
MAY	.	.	.	.520	.	.	.	.
AUG	.600	.600	.	.	.	.	.	.
SEP	.550	.550	.	.	.	.	.	.
OCT	.500	.500	.	.	.	.	.	.
NOV	.500	.500	.	.	.	.	.	.
DEC	.380	.380	.	.	.	.	.	.

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
CHEMISTRY (LAB)								
ALKALINITY (MG/L)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	20.100	19.200	19.200	19.400	.	.
FEB	.	.	21.600	20.900	21.400	20.700	.	.
MAR	.	.	22.200	22.200	22.100	22.500	.	.
APR	.	.	19.900	18.400	.	.	.	.
MAY	.	.	18.800	18.200	.	.	18.500	17.900
JUN	.	.	.	.	.	.	20.000	19.100
JUL	.	.	20.400	18.600	.	.	19.800	19.600
AUG	13.000	21.700	23.500	23.300	.	.	24.000	24.100
SEP	13.000	21.300	22.100	20.800	.	.	.	.
OCT	13.400	17.000	17.700	17.500	.	.	20.100	20.500
NOV	13.300	17.100	18.100	17.500	.	.	17.500	17.200
DEC	13.600	15.900	17.200	16.700	.	.	16.600	16.500
CALCIUM (MG/L)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	6.200	6.000	6.400	6.400	.	.
FEB	.	.	7.000	6.800	7.000	6.400	.	.
MAR	.	.	8.000	7.800	7.800	8.200	.	.
APR	.	.	6.600	6.800	.	.	.	.
MAY	.	.	6.000	5.800	.	.	6.200	6.200
JUN	.	.	.	.	.	.	6.800	6.800
JUL	.	.	6.200	6.000	.	.	6.400	6.200
AUG	6.400	6.800	6.000	6.200	.	.	6.400	6.300
SEP	6.200	7.000	7.000	6.400	.	.	.	.
OCT	6.000	5.400	6.200	5.800	.	.	6.600	6.000
NOV	7.000	7.000	7.600	7.400	.	.	7.400	7.000
DEC	8.100	8.000	8.500	8.200	.	.	7.900	8.300
CHLORIDE (MG/L)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	16.800	16.500	16.500	16.700	.	.
FEB	.	.	18.000	18.000	18.500	17.300	.	.
MAR	.	.	22.500	22.400	22.000	22.100	.	.
APR	.	.	19.400	19.200	.	.	.	.
MAY	.	.	16.000	16.000	.	.	17.500	17.900
JUN	.	.	.	.	.	.	14.200	14.800
JUL	.	.	14.600	14.000	.	.	14.300	14.500
AUG	12.300	13.600	14.000	13.800	.	.	13.600	13.600
SEP	12.300	13.800	14.100	14.000	.	.	.	.
OCT	13.000	14.400	14.800	14.700	.	.	15.200	15.100
NOV	13.200	14.400	14.700	14.700	.	.	14.700	14.700
DEC	13.600	14.700	15.200	15.100	.	.	15.200	15.200

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
COLOUR (HZU)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	5.000	10.500	6.000	5.500	.	.
FEB	.	.	6.000	6.000	5.500	6.000	.	.
MAR	.	.	7.500	7.000	7.000	7.000	.	.
APR	.	.	7.000	8.000	.	.	.	.
MAY	.	.	6.000	6.000	.	.	4.500	4.500
JUN	.	.	.	.	.	.	6.000	5.500
JUL	.	.	6.000	6.500	.	.	5.000	5.000
AUG	7.500	5.000	5.500	6.000	.	.	5.000	9.500
SEP	8.000	5.500	6.500	6.500	.	.	.	.
OCT	7.000	4.500	6.000	6.000	.	.	5.000	4.500
NOV	7.000	4.500	5.500	6.500	.	.	4.500	4.500
DEC	7.000	4.500	6.000	6.500	.	.	5.000	5.000
CONDUCTIVITY (UMHO/CM)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	135	123	125	124	.	.
FEB	.	.	138	134	136	133	.	.
MAR	.	.	154	154	152	154	.	.
APR	.	.	143	140	.	.	.	.
MAY	.	.	121	119	.	.	128	126
JUN	.	.	.	.	.	.	124	124
JUL	.	.	119	114	.	.	117	118
AUG	94	118	125	121	.	.	123	123
SEP	94	118	120	118	.	.	.	.
OCT	95	111	113	112	.	.	120	120
NOV	97	112	116	114	.	.	115	114
DEC	100	114	118	116	.	.	117	117
FLUORIDE (MG/L)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	1.140	1.120	1.140	1.140	.	.
FEB	.	.	1.120	1.100	1.140	1.120	.	.
MAR	.	.	1.100	1.120	1.120	1.100	.	.
APR	.	.	1.100	1.100	.	.	.	.
MAY	.	.	1.120	1.100	.	.	1.120	1.120
JUN	.	.	.	.	.	.	1.120	1.100
JUL	.	.	1.180	1.160	.	.	1.160	1.160
AUG	.100	1.000	1.060	1.020	.	.	1.140	1.140
SEP	.080	.960	1.040	1.060	.	.	.	.
OCT	.080	.940	.940	.960	.	.	1.040	1.040
NOV	.080	1.060	1.080	1.040	.	.	1.040	.980
DEC	.080	1.040	1.060	1.060	.	.	1.080	1.120

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
HARDNESS (MG/L)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	23.000	22.000	23.000	24.000	.	.
FEB	.	.	25.000	25.000	26.000	23.000	.	.
MAR	.	.	28.000	28.000	28.000	28.000	.	.
APR	.	.	25.000	25.000	.	.	.	.
MAY	.	.	22.000	21.000	.	.	23.000	23.000
JUN	.	.	.	.	.	.	25.000	24.000
JUL	.	.	23.000	15.000	.	.	23.000	23.000
AUG	23.000	25.000	22.000	22.000	.	.	23.000	23.000
SEP	22.000	25.000	24.000	23.000	.	.	.	.
OCT	22.000	21.000	23.000	22.000	.	.	24.000	22.000
NOV	26.000	26.000	27.000	26.000	.	.	26.000	26.000
DEC	27.600	27.200	28.600	27.400	.	.	26.800	27.800
IONCAL (DMNSLESS)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	1.211	2.832	3.343	4.608	.	.
FEB	.	.	8.785	9.003	9.545	9.740	.	.
MAR	.	.	9.258	8.936	9.916	9.121	.	.
APR	.	.	.320	3.723	.	.	.	.
MAY	.	.	.300	.313	.	.	.211	.066
JUN	.	.	.	.	.	.	6.007	9.161
JUL	.	.	3.091	6.208	.	.	7.777	6.600
AUG	.615	5.571	2.142	5.796	.	.	6.154	5.922
SEP	3.180	13.270	5.756	6.533	.	.	.	.
OCT	4.209	.776	1.670	.428	.	.	3.334	.675
NOV	.830	6.453	6.957	8.067	.	.	5.872	4.887
DEC	2.718	3.652	3.548	4.850	.	.	.125	4.006
LANGELIERS INDEX (DMNSLESS)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	-1.958	-1.846	-1.949	-1.834	.	.
FEB	.	.	-1.565	-1.610	-1.608	-1.650	.	.
MAR	.	.	-1.593	-1.614	-1.595	-1.596	.	.
APR	.	.	-1.689	-1.688	.	.	.	.
MAY	.	.	-1.895	-1.843	.	.	-1.821	-1.794
JUN	.	.	.	.	.	.	-1.905	-1.925
JUL	.	.	-1.684	-1.716	.	.	-1.712	-1.701
AUG	-2.295	-1.637	-1.680	-1.677	.	.	-1.562	-1.577
SEP	-2.298	-1.692	-1.677	-1.721	.	.	.	.
OCT	-2.070	-1.900	-1.823	-1.856	.	.	-1.674	-1.717
NOV	-2.087	-1.835	-1.886	-1.802	.	.	-1.852	-1.843
DEC	-1.855	-1.749	-1.681	-1.708	.	.	-1.717	-1.709

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
MAGNESIUM (MG/L)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	1.800	1.800	1.800	2.000	.	.
FEB	.	.	1.800	1.900	2.000	1.700	.	.
MAR	.	.	2.000	2.000	2.100	2.000	.	.
APR	.	.	2.000	1.900	.	.	.	.
MAY	.	.	1.700	1.600	.	.	1.700	1.800
JUN	.	.	.	.	.	.	1.900	1.800
JUL	.	.	1.800	1.900	.	.	1.800	1.800
AUG	1.800	1.800	1.800	1.800	.	.	1.800	1.800
SEP	1.500	1.800	1.500	1.600	.	.	.	.
OCT	1.900	1.900	1.900	1.900	.	.	1.800	1.800
NOV	2.000	2.000	2.000	1.900	.	.	1.800	1.900
DEC	1.750	1.750	1.800	1.700	.	.	1.750	1.750
SODIUM (MG/L)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	14.000	13.400	13.400	13.400	.	.
FEB	.	.	15.200	15.000	15.200	15.200	.	.
MAR	.	.	18.800	18.600	18.400	18.200	.	.
APR	.	.	14.800	14.600	.	.	.	.
MAY	.	.	13.400	13.400	.	.	14.400	14.000
JUN	.	.	.	.	.	.	12.800	13.600
JUL	.	.	13.000	12.400	.	.	13.400	13.400
AUG	7.800	13.600	15.000	15.200	.	.	15.400	15.400
SEP	8.000	14.800	14.200	14.200	.	.	.	.
OCT	7.800	11.600	11.800	11.800	.	.	13.400	13.600
NOV	7.600	11.400	11.800	11.800	.	.	11.800	11.600
DEC	6.500	9.700	10.000	10.300	.	.	9.800	10.100
AMMONIUM TOTAL (MG/L)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	.756	.074	.130	.006	.	.
FEB	.	.	.068	BDL	.114	.008 <T	.	.
MAR	.	.	.032	BDL	.002 <T	BDL	.	.
APR	.	.	.170	BDL	.	.	.	.
MAY	.	.	.006 <T	.002 <T	.	.	.084	BDL
JUN	.	.	.	.	.	.	.014	.006 <T
JUL	.	.	.036	BDL	.	.	.004 <T	BDL
AUG	.002 <T	.002 <T	.230	.008 <T	.	.	.002 <T	.004 <T
SEP	BDL	BDL	.002 <T	BDL	.	.	.	.
OCT	.004 <T	.004 <T	.020	.002 <T	.	.	.022	.002 <T
NOV	.010	BDL	.004 <T	BDL	.	.	.004 <T	BDL
DEC	.008 <T	BDL	.016	BDL	.	.	BDL	BDL

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
NITRITE (MG/L)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	.005	.003 <T	.005	.004 <T	.	.
FEB	.	.	.002 <T	.001 <T	.001 <T	.001 <T	.	.
MAR	.	.	.007	.007	.008	.007	.	.
APR	.	.	.004 <T	.003 <T	.	.	.	.
MAY	.	.	.009	.006	.	.	.005	.006
JUN	.	.	.	.	.	.	.007	.004 <T
JUL	.	.	.003 <T	.003 <T	.	.	.004 <T	.004 <T
AUG	.002 <T	.001 <T	.003 <T	.002 <T	.	.	.002 <T	.002 <T
SEP	.001 <T	BDL	.001 <T	.001 <T	.	.	.	.
OCT	.004 <T	.006	.003 <T	.004 <T	.	.	.003 <T	.002 <T
NOV	.006	.002 <T	.003 <T	.002 <T	.	.	.003 <T	.002 <T
DEC	.005	.005	.005	.006	.	.	.005	.008
TOTAL NITRATES (MG/L)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	1.240	.245	.335	.235	.	.
FEB	.	.	.435	.285	.425	.280	.	.
MAR	.	.	.405	.350	.355	.350	.	.
APR	.	.	.680	.400	.	.	.	.
MAY	.	.	.320	.315	.	.	.500	.330
JUN	.	.	.	.	.	.	.335	.290
JUL	.	.	.325	.270	.	.	.300	.275
AUG	.245	.230	.560	.230	.	.	.210	.235
SEP	.315	.300	.330	.320	.	.	.	.
OCT	.185	.195	.220	.195	.	.	.250	.225
NOV	.220	.200	.390	.210	.	.	.300	.200
DEC	.240	.240	.300	.235	.	.	.250	.225
NITROGEN TOT KJELD (MG/L)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	.960	.240	.320	.270	.	.
FEB	.	.	.390	.280	.410	.210	.	.
MAR	.	.	.340	.260	.270	.270	.	.
APR	.	.	.620	.280	.	.	.	.
MAY	.	.	.320	.250	.	.	.390	.240
JUN	.	.	.	.	.	.	.240	.170
JUL	.	.	.400	.180	.	.	.220	.190
AUG	.180	.170	.540	.180	.	.	.180	.180
SEP	.190	.220	.210	.190	.	.	.	.
OCT	.250	.240	.260	.210	.	.	.290	.210
NOV	.240	.220	.250	.210	.	.	.280	.300
DEC	.180	.170	.250	.170	.	.	.170	.180

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
PH (DMNSLESS)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	7.320	7.460	7.330	7.440	.	.
FEB	.	.	7.630	7.610	7.590	7.600	.	.
MAR	.	.	7.540	7.530	7.550	7.520	.	.
APR	.	.	7.570	7.590	.	.	.	.
MAY	.	.	7.420	7.500	.	.	7.490	7.530
JUN	.	.	.	.	.	.	7.330	7.330
JUL	.	.	7.580	7.600	.	.	7.550	7.580
AUG	7.140	7.560	7.540	7.530	.	.	7.620	7.610
SEP	7.150	7.500	7.500	7.520	.	.	.	.
OCT	7.380	7.500	7.500	7.500	.	.	7.570	7.560
NOV	7.300	7.450	7.340	7.450	.	.	7.400	7.440
DEC	7.460	7.510	7.520	7.520	.	.	7.530	7.520
PHOSPHORUS FIL REACT (MG/L)			DET'N LIMIT = .0005		GUIDELINE = N/A			
AUG	BDL	.004	.	.	.	.	.	.
SEP	BDL	.	.	.	.	.	.	.
OCT	BDL	.003	.	.	.	.	.	.
NOV	BDL	BDL	.	.	.	.	.	.
DEC	BDL	.001 <T	.	.	.	.	.	.
PHOSPHORUS TOTAL (MG/L)			DET'N LIMIT = .002		GUIDELINE = .40 (F2)			
AUG	.005 <T	.010	.	.	.	.	.	.
SEP	.004 <T	.	.	.	.	.	.	.
OCT	.002 <T	.007 <T	.	.	.	.	.	.
NOV	.005 <T	.012	.	.	.	.	.	.
DEC	.004 <T	.009 <T	.	.	.	.	.	.
SULPHATE (MG/L)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	6.860	6.740	7.310	6.940	.	.
FEB	.	.	4.740	5.150	4.800	4.780	.	.
MAR	.	.	7.640	7.220	7.290	7.350	.	.
APR	.	.	7.320	7.300	.	.	.	.
MAY	.	.	8.140	8.140	.	.	8.650	8.680
JUN	.	.	.	.	.	.	8.140	8.110
JUL	.	.	7.290	7.240	.	.	7.400	7.460
AUG	9.010	9.040	9.040	8.950	.	.	9.270	8.980
SEP	8.470	8.210	8.070	8.140	.	.	.	.
OCT	8.690	8.540	8.510	8.480	.	.	8.600	8.660
NOV	8.850	8.940	8.850	8.730	.	.	9.020	9.140
DEC	8.710	8.710	8.630	8.370	.	.	8.870	8.850

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
TURBIDITY (FTU)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	.850	.470	.850	.940	.	.
FEB	.	.	.840	.800	.960	.410	.	.
MAR	.	.	.710	.780	.790	.790	.	.
APR	.	.	1.240	.850	.	.	.	.
MAY	.	.	.880	.910	.	.	.900	.850
JUN	.	.	.	.	.	.	1.080 RRV	.550
JUL	.	.	.870	.690	.	.	.880	.870
AUG	.410	.380	.680	.470	.	.	.590	.600
SEP	.500	.660	.710	.820	.	.	.	.
OCT	.820	.600	.730	.860	.	.	.900	.660
NOV	.510	.400	.690	.570	.	.	1.230	.660
DEC	.370	.360	.650	.500	.	.	.510	.590

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW

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DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
METALS								
SILVER ( )				DET'N LIMIT =	GUIDELINE =			
JAN	.	.	.590	.040 <T	.190 <T	BDL	.	.
FEB	.	.	.290 <T	.030 <T	.140 <T	BDL	.	.
MAR	.	.	.070 <T	BDL	.240 <T	BDL	.	.
APR	.	.	.220 <T	BDL	.	.	.	.
MAY	.	.	.270 <T	.090 <T	.	.	BDL	BDL
JUN	.	.	.	.	.	.	BDL	.030 <T
JUL	.	.	.270 <T	BDL	.	.	BDL	BDL
AUG	.040 <T	BDL	.160 <T	BDL	.	.	BDL	BDL
SEP	BDL	BDL	BDL	BDL	.	.	.	.
OCT	BDL	BDL	.030 <T	BDL	.	.	BDL	.080 <T
NOV	BDL	BDL	.050 <T	BDL	.	.	BDL	BDL
DEC	BDL	BDL	BDL	BDL	.	.	BDL	BDL
ALUMINUM ( )				DET'N LIMIT =	GUIDELINE =			
JAN	.	.	11.600	11.484	10.788	11.484	.	.
FEB	.	.	9.280	8.816	9.744	9.396	.	.
MAR	.	.	16.240	16.240	23.200	16.240	.	.
APR	.	.	22.040	25.520	.	.	.	.
MAY	.	.	24.360	23.200	.	.	33.640	35.960
JUN	.	.	.	.	.	.	15.000	20.000
JUL	.	.	17.000	17.000	.	.	20.000	19.000
AUG	14.000	11.000	12.000	11.000	.	.	20.000	11.000
SEP	11.000	12.000	12.000	12.000	.	.	.	.
OCT	7.800	7.400	14.000	11.000	.	.	11.000	3.500
NOV	8.300	9.200	11.000	11.000	.	.	11.000	10.000

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ORINKING WATER SURVEILLANCE PROGRAM NORTH BAY WTP 1989

SITE TYPE	WATER TREATMENT PLANT RAW	WATER TREATMENT PLANT TREATED	DISTRIBUTION SYSTEM SITE 1 STANDING	DISTRIBUTION SYSTEM SITE 1 FREE FLOW	DISTRIBUTION SYSTEM SITE 2 STANDING	DISTRIBUTION SYSTEM SITE 2 FREE FLOW	DISTRIBUTION SYSTEM SITE 3 STANDING	DISTRIBUTION SYSTEM SITE 3 FREE FLOW
DEC	8.600	9.300	2.300	3.900	.	.	9.700	12.000
ARSENIC ( )			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	.190 <T	.260 <T	.450 <T	.520 <T	.	.
FEB	.	.	.800 <T	.650 <T	.680 <T	.800 <T	.	.
MAR	.	.	.680 <T	1.100	.710 <T	.790 <T	.	.
APR	.	.	.440 <T	.790 <T	.	.	.	.
MAY	.	.	.680 <T	.840 <T	.	.	.930 <T	.850 <T
JUN	.	.	.	.	.	.	.460 <T	.910 <T
JUL	.	.	.080 <T	.500 <T	.	.	.230 <T	.890 <T
AUG	.370 <T	.860 <T	.790 <T	.790 <T	.	.	.870 <T	.830 <T
SEP	.440 <T	.580 <T	.500 <T	.540 <T	.	.	.	.
OCT	BDL	.270 <T	.490 <T	.500 <T	.	.	.550 <T	.310 <T
NOV	.150 <T	.510 <T	.440 <T	.490 <T	.	.	.530 <T	.450 <T
DEC	.140 <T	.320 <T	.250 <T	.310 <T	.	.	.430 <T	.370 <T
BARIUM ( )			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	18.000	16.000	17.000	16.000	.	.
FEB	.	.	18.000	16.000	18.000	17.000	.	.
MAR	.	.	17.000	17.000	18.000	18.000	.	.
APR	.	.	20.000	18.000	.	.	.	.
MAY	.	.	15.000	16.000	.	.	17.000	17.000
JUN	.	.	.	.	.	.	16.000	14.000
JUL	.	.	17.000	17.000	.	.	17.000	17.000
AUG	15.000	15.000	16.000	15.000	.	.	14.000	14.000
SEP	16.000	16.000	19.000	18.000	.	.	.	.

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DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
OCT	16.000	16.000	14.000	14.000	.	.	16.000	14.000
NOV	16.000	15.000	15.000	14.000	.	.	15.000	14.000
DEC	17.000	17.000	14.000	14.000	.	.	16.000	17.000
BORON ( )			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	14.000 <T	8.000 <T	6.400 <T	20.000 <T	.	.
FEB	.	.	17.000 <T	16.000 <T	11.000 <T	14.000 <T	.	.
MAR	.	.	14.000 <T	9.100 <T	6.600 <T	7.000 <T	.	.
APR	.	.	14.000 <T	11.000 <T	.	.	.	.
MAY	.	.	29.000	7.100 <T	.	.	7.200 <T	6.300 <T
JUN	.	.	.	.	.	.	9.100 <T	6.700 <T
JUL	.	.	31.000	11.000 <T	.	.	15.000 <T	11.000 <T
AUG	15.000 <T	13.000 <T	21.000	15.000 <T	.	.	11.000 <T	11.000 <T
SEP	10.000 <T	11.000 <T	12.000 <T	9.600 <T	.	.	.	.
OCT	8.800 <T	9.000 <T	11.000 <T	9.000 <T	.	.	8.500 <T	8.900 <T
NOV	9.100 <T	7.600 <T	7.700 <T	7.500 <T	.	.	9.000 <T	7.000 <T
DEC	11.000 <T	8.600 <T	8.000 <T	6.900 <T	.	.	7.300 <T	10.000 <T
BERYLLIUM ( )			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	BDL	BDL	BDL	BDL	.	.
FEB	.	.	.050 <T	BDL	BDL	.070 <T	.	.
MAR	.	.	BDL	.140 <T	BDL	.150 <T	.	.
APR	.	.	BDL	.210 <T	.	.	.	.
MAY	.	.	BDL	BDL	.	.	BDL	BDL
JUN	.	.	.	.	.	.	.050 <T	BDL
JUL	.	.	BDL	BDL	.	.	BDL	BDL

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DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 2		SITE 3	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
AUG	BDL	.080 <T	.050 <T	BDL	.	.	.050 <T	BDL
SEP	.020 <T	.030 <T	.020 <T	BDL	.	.	.	.
OCT	BDL	BDL	BDL	BDL	.	.	BDL	BDL
NOV	BDL	BDL	BDL	BDL	.	.	BDL	BDL
DEC	BDL	BDL	BDL	BDL	.	.	.080 <T	BDL
CADMIUM ( )			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	.070 <T	BDL	.070 <T	BDL	.	.
FEB	.	.	BDL	BDL	.330 <T	BDL	.	.
MAR	.	.	BDL	BDL	.300 <T	BDL	.	.
APR	.	.	.260 <T	BDL	.	.	.	.
MAY	.	.	.110 <T	BDL	.	.	.300 <T	.250 <T
JUN	.	.	.	.	.	.	.230 <T	BDL
JUL	.	.	.350 <T	BDL	.	.	.110 <T	.060 <T
AUG	BDL	BDL	.670	BDL	.	.	BDL	BDL
SEP	BDL	.060 <T	.300 <T	BDL	.	.	.	.
OCT	BDL	BDL	.080 <T	BDL	.	.	BDL	.070 <T
NOV	BDL	BDL	.140 <T	BDL	.	.	.070 <T	BDL
DEC	.180 <T	BDL	.070 <T	BDL	.	.	BDL	BDL
COBALT ( )			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	.990 <T	.100 <T	.550 <T	.120 <T	.	.
FEB	.	.	.150 <T	.130 <T	.300 <T	.100 <T	.	.
MAR	.	.	.170 <T	.190 <T	.470 <T	.160 <T	.	.
APR	.	.	.460 <T	.160 <T	.	.	.	.
MAY	.	.	.240 <T	.250 <T	.	.	.330 <T	.290 <T

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DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
JUN	.	.	.	.	.	.	.210 <T	.210 <T
JUL	.	.	.290 <T	.230 <T	.	.	.300 <T	.280 <T
AUG	.100 <T	.090 <T	.110 <T	.130 <T	.	.	.110 <T	.090 <T
SEP	.070 <T	.100 <T	.080 <T	.070 <T	.	.	.	.
OCT	.290 <T	.200 <T	.220 <T	.100 <T	.	.	.090 <T	.080 <T
NOV	.430 <T	.130 <T	.400 <T	.190 <T	.	.	.080 <T	.100 <T
DEC	.090 <T	1.300	.290 <T	.250 <T	.	.	.140 <T	.110 <T
CHROMIUM ( )			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	.400 <T	BDL	BDL	.820 <T	.	.
FEB	.	.	.350 <T	1.200	.770 <T	2.300	.	.
MAR	.	.	BDL	BDL	BDL	BDL	.	.
APR	.	.	.540 <T	.660 <T	.	.	.	.
MAY	.	.	2.200	.480 <T	.	.	.580 <T	.740 <T
JUN	.	.	.	.	.	.	.980 <T	.240 <T
JUL	.	.	1.400	1.100	.	.	1.100	1.200
AUG	.690 <T	.950 <T	1.200	1.200	.	.	.600 <T	.640 <T
SEP	.660 <T	1.000 <T	1.200	.460 <T	.	.	.	.
OCT	.450 <T	.290 <T	.720 <T	.130 <T	.	.	.530 <T	.770 <T
NOV	BDL	BDL	BDL	BDL	.	.	BDL	BDL
DEC	BDL	BDL	BDL	BDL	.	.	BDL	BDL
COPPER ( )			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	500.000	36.000	180.000	110.000	.	.
FEB	.	.	270.000	37.000	500.000	80.000	.	.
MAR	.	.	69.000	26.000	400.000	71.000	.	.

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DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 2		SITE 3	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
APR	.	.	580.000	41.000	.	.	.	.
MAY	.	.	130.000	39.000	.	.	300.000	28.000
JUN	.	.	.	.	.	.	560.000	52.000
JUL	.	.	310.000	49.000	.	.	600.000	44.000
AUG	2.100	2.200	300.000	44.000	.	.	38.000	38.000
SEP	2.000	2.200	480.000	76.000	.	.	.	.
OCT	2.000	2.200	120.000	29.000	.	.	65.000	23.000
NOV	1.900	2.100	240.000	32.000	.	.	250.000	20.000
DEC	2.200 <T	2.300 <T	39.000	27.000	.	.	100.000	44.000
IRON ( ):			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	98.000	150.000	81.000	84.000	.	.
FEB	.	.	87.000	110.000	59.000	55.000	.	.
MAR	.	.	140.000	150.000	110.000	97.000	.	.
APR	.	.	120.000	160.000	.	.	.	.
MAY	.	.	150.000	130.000	.	.	70.000	68.000
JUN	.	.	.	.	.	.	30.000 <T	41.000 <T
JUL	.	.	55.000	75.000	.	.	45.000 <T	39.000 <T
AUG	21.000 <T	25.000 <T	48.000 <T	65.000	.	.	19.000 <T	16.000 <T
SEP	24.000 <T	37.000 <T	78.000	81.000	.	.	.	.
OCT	38.000 <T	38.000 <T	100.000	110.000	.	.	29.000 <T	BDL
NOV	29.000 <T	42.000 <T	64.000	91.000	.	.	21.000 <T	25.000 <T
DEC	44.000 <T	39.000 <T	BDL	BDL	.	.	57.000 <T	36.000 <T
MERCURY ( )			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	.	.030 <T	.	.120	.	.

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DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 2		SITE 3	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	.	.	.	.040 <T	.	.120	.	.
MAR	.	.	.	.340	.	.150	.	.
APR	.	.	.	.140	.	.	.	.
MAY	.	.	.	.080	.	.	.	.120
JUN	.	.	.	.	.	.	.	.180
JUL	.	.	.	.460	.	.	.	BDL
AUG	BDL	BDL	.	.440	.	.	.	BDL
SEP	BDL	BDL	.	.200	.	.	.	.
OCT	.030 <T	.040 <T	.	.290	.	.	.	BDL
NOV	.040 <T	.050 <T	.	.550	.	.	.	.020 <T
DEC	.080	.050 <T	.	ICS	.	.	.	.020 <T
MANGANESE ( )			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	9.900	9.400	7.800	8.000	.	.
FEB	.	.	9.600	9.500	8.200	7.600	.	.
MAR	.	.	9.400	9.400	11.000	9.100	.	.
APR	.	.	11.000	10.000	.	.	.	.
MAY	.	.	11.000	12.000	.	.	11.000	11.000
JUN	.	.	.	.	.	.	8.400	11.000
JUL	.	.	12.000	15.000	.	.	21.000	16.000
AUG	6.600	7.400	11.000	11.000	.	.	5.600	5.600
SEP	7.000	8.000	15.000	15.000	.	.	.	.
OCT	4.100	4.600	8.500	7.000	.	.	4.800	.410 <T
NOV	3.800	3.900	7.000	7.700	.	.	4.100	3.500
DEC	3.800	4.000	BDL	BDL	.	.	3.500	5.100
MOLYBDENUM ( )			DET'N LIMIT =		GUIDELINE =			

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DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
JAN	.	.	.100 <T	BDL	BDL	BDL	.	.
FEB	.	.	.150 <T	.080 <T	.120 <T	.120 <T	.	.
MAR	.	.	.210 <T	.180 <T	.110 <T	.130 <T	.	.
APR	.	.	.230 <T	.110 <T	.	.	.	.
MAY	.	.	BDL	.070 <T	.	.	.170 <T	.100 <T
JUN	.	.	.	.	.	.	.070 <T	.150 <T
JUL	.	.	.040 <T	.050 <T	.	.	.080 <T	.220 <T
AUG	.090 <T	.170 <T	.140 <T	.150 <T	.	.	.100 <T	.080 <T
SEP	.040 <T	.060 <T	.070 <T	.040 <T	.	.	.	.
OCT	.290 <T	.140 <T	.120 <T	.100 <T	.	.	.040 <T	.620
NOV	.170 <T	.090 <T	.050 <T	.070 <T	.	.	.030 <T	BDL
DEC	.160 <T	BDL	.290 <T	.110 <T	.	.	BDL	BDL
NICKEL ( )			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	500.000	1.700 <T	150.000	.990 <T	.	.
FEB	.	.	20.000	.650 <T	58.000	.740 <T	.	.
MAR	.	.	5.700	.880 <T	68.000	1.000 <T	.	.
APR	.	.	140.000	1.300 <T	.	.	.	.
MAY	.	.	9.800	1.100 <T	.	.	23.000	1.200 <T
JUN	.	.	.	.	.	.	2.200	1.800 <T
JUL	.	.	15.000	.240 <T	.	.	11.000	.190 <T
AUG	.600 <T	.710 <T	13.000	.780 <T	.	.	.780 <T	.580 <T
SEP	.680 <T	.660 <T	8.100	.900 <T	.	.	.	.
OCT	.590 <T	.780 <T	5.100	.630 <T	.	.	.630 <T	.140 <T
NOV	.520 <T	.570 <T	150.000	.740 <T	.	.	1.300 <T	.560 <T
DEC	.760 <T	.790 <T	.320 <T	BDL	.	.	2.400	.750 <T

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DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
LEAD ( )				DET'N LIMIT =	GUIDELINE =			
JAN	.	.	73.000 RRV	3.200	2.700	2.000	.	.
FEB	.	.	35.000	2.900	8.300	1.100	.	.
MAR	.	.	24.000	4.300	18.000	1.500	.	.
APR	.	.	91.000	6.800	.	.	.	.
MAY	.	.	15.000	3.200	.	.	15.000	1.400
JUN	.	.	.	.	.	.	12.000	1.900
JUL	.	.	37.000	3.900	.	.	9.000	1.800
AUG	.320	.280	50.000	4.100	.	.	1.400	1.400
SEP	BDL	BDL	72.000 RRV	7.100	.	.	.	.
OCT	.520	.310	24.000	3.100	.	.	1.900	1.600
NOV	.100 <T	.100 <T	41.000	4.000	.	.	6.900	.750
DEC	.200 <T	.350 <T	28.000	2.800	.	.	10.000	1.600
ANTIMONY ( )				DET'N LIMIT =	GUIDELINE =			
JAN	.	.	.540	.450	.410	.410	.	.
FEB	.	.	.570	.600	.470	.490	.	.
MAR	.	.	.690	.650	.630	.590	.	.
APR	.	.	.490	.470	.	.	.	.
MAY	.	.	.910	.990	.	.	.840	.960
JUN	.	.	.	.	.	.	.740	.490
JUL	.	.	.690	.720	.	.	.750	.880
AUG	.550	.650	.660	.620	.	.	.640	.510
SEP	.400	.390	.380	.420	.	.	.	.
OCT	1.200	.620	.490	.470	.	.	.430	1.200
NOV	.820	.560	.480	.710	.	.	.460	.410
DEC	.340 <T	2.800	6.000	4.400	.	.	.450 <T	.470 <T

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DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
SELENIUM ( )			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	1.400 <T	1.000 <T	1.300 <T	1.100 <T	.	.
FEB	.	.	2.400 <T	3.400 <T	2.000 <T	1.300 <T	.	.
MAR	.	.	3.000 <T	2.000 <T	.420 <T	1.800 <T	.	.
APR	.	.	.270 <T	.400 <T	.	.	.	.
MAY	.	.	1.900 <T	.940 <T	.	.	2.400 <T	3.800 <T
JUN	.	.	.	.	.	.	BDL	BDL
JUL	.	.	BDL	1.300 <T	.	.	BDL	BDL
AUG	1.400 <T	BDL	BDL	BDL	.	.	BDL	BDL
SEP	BDL	BDL	BDL	BDL	.	.	.	.
OCT	BDL	BDL	BDL	BDL	.	.	BDL	BDL
NOV	BDL	BDL	BDL	BDL	.	.	BDL	BDL
DEC	BDL	BDL	1.900 <T	1.100 <T	.	.	BDL	BDL
STRONTIUM ( )			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	48.000	46.000	49.000	46.000	.	.
FEB	.	.	51.000	50.000	52.000	50.000	.	.
MAR	.	.	52.000	50.000	52.000	53.000	.	.
APR	.	.	53.000	51.000	.	.	.	.
MAY	.	.	47.000	52.000	.	.	55.000	53.000
JUN	.	.	.	.	.	.	45.000	43.000
JUL	.	.	50.000	47.000	.	.	49.000	49.000
AUG	44.000	45.000	45.000	43.000	.	.	44.000	44.000
SEP	47.000	48.000	52.000	49.000	.	.	.	.
OCT	47.000	45.000	48.000	47.000	.	.	47.000	54.000
NOV	46.000	43.000	45.000	42.000	.	.	45.000	44.000
DEC	45.000	46.000	84.000	75.000	.	.	42.000	50.000

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
TITANIUM ( )				DET'N LIMIT =	GUIDELINE =			
JAN	.	.	12.000	10.000	1.500 <T	2.000 <T	.	.
FEB	.	.	6.600	10.000	1.500 <T	1.500 <T	.	.
MAR	.	.	5.100	8.300	3.500	3.300	.	.
APR	.	.	4.300	5.400	.	.	.	.
MAY	.	.	14.000	4.600	.	.	3.200	3.700
JUN	.	.	.	.	.	.	4.700	4.800
JUL	.	.	4.600	4.300	.	.	5.500	5.500
AUG	8.000	8.700	2.900	2.800	.	.	4.000	3.900
SEP	8.300	12.000	1.600 <T	1.500 <T	.	.	.	.
OCT	16.000	14.000	2.300	2.200	.	.	3.300	3.800
NOV	9.400	12.000	1.500 <T	1.500 <T	.	.	2.500	2.300
DEC	15.000	12.000	1.600 <T	1.500 <T	.	.	3.200 <T	3.600 <T
THALLIUM ( )				DET'N LIMIT =	GUIDELINE =			
JAN	.	.	.030 <T	BDL	BDL	BDL	.	.
FEB	.	.	.030 <T	BDL	BDL	BDL	.	.
MAR	.	.	BDL	BDL	BDL	BDL	.	.
APR	.	.	.120 <T	BDL	.	.	.	.
MAY	.	.	.070 <T	.020 <T	.	.	.060 <T	.070 <T
JUN	.	.	.	.	.	.	.020 <T	.020 <T
JUL	.	.	.040 <T	BDL	.	.	BDL	BDL
AUG	BDL	BDL	BDL	BDL	.	.	BDL	BDL
SEP	.190 <T	.460	.310	.260	.	.	.	.
OCT	.020 <T	.050 <T	.030 <T	.030 <T	.	.	BDL	BDL
NOV	BDL	BDL	BDL	BDL	.	.	.040 <T	BDL
DEC	BDL	BDL	BDL	BDL	.	.	BDL	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY WTP 1989

SITE - TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
URANIUM ( )				DET'N LIMIT =	GUIDELINE =			
JAN	.	.	.040 <T	BDL	BDL	BDL	.	.
FEB	.	.	.080 <T	.060 <T	.050 <T	.030 <T	.	.
MAR	.	.	BDL	BDL	BDL	.030 <T	.	.
APR	.	.	BDL	BDL	.	.	.	.
MAY	.	.	.060 <T	BDL	.	.	.090 <T	.040 <T
JUN	.	.	.	.	.	.	.130 <T	.100 <T
JUL	.	.	.150 <T	.050 <T	.	.	.050 <T	BDL
AUG	BDL	BDL	.030 <T	.030 <T	.	.	.030 <T	BDL
SEP	BDL	BDL	BDL	BDL	.	.	.	.
OCT	.050 <T	BDL	.030 <T	BDL	.	.	BDL	.050 <T
NOV	.030 <T	BDL	BDL	BDL	.	.	BDL	BDL
DEC	BDL	BDL	.100 <T	.070 <T	.	.	BDL	BDL
VANADIUM ( )				DET'N LIMIT =	GUIDELINE =			
JAN	.	.	BDL	BDL	BDL	BDL	.	.
FEB	.	.	BDL	BDL	BDL	BDL	.	.
MAR	.	.	BDL	BDL	BDL	BDL	.	.
APR	.	.	.120 <T	.140 <T	.	.	.	.
MAY	.	.	.220 <T	.190 <T	.	.	.210 <T	.190 <T
JUN	.	.	.	.	.	.	.420 <T	.480 <T
JUL	.	.	.170 <T	.200 <T	.	.	.210 <T	.190 <T
AUG	.070 <T	.090 <T	.090 <T	.090 <T	.	.	.100 <T	.080 <T
SEP	.120 <T	.100 <T	.060 <T	.040 <T	.	.	.	.
OCT	.050 <T	.020 <T	.040 <T	.050 <T	.	.	.040 <T	.030 <T
NOV	.180 <T	.190 <T	.070 <T	.120 <T	.	.	.100 <T	.110 <T
DEC	.110 <T	.110 <T	BDL	BDL	.	.	BDL	.060 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
ZINC ( )				DET'N LIMIT =	GUIDELINE =			
JAN	.	.	290.000	9.500	29.000	9.600	.	.
FEB	.	.	47.000	9.500	30.000	9.500	.	.
MAR	.	.	21.000	9.600	39.000	10.000	.	.
APR	.	.	140.000	13.000	.	.	.	.
MAY	.	.	33.000	11.000	.	.	24.000	11.000
JUN	.	.	.	.	.	.	18.000	9.900
JUL	.	.	61.000	15.000	.	.	29.000	12.000
AUG	12.000	12.000	54.000	11.000	.	.	9.900	9.800
SEP	12.000	12.000	51.000	14.000	.	.	.	.
OCT	8.800	8.800	37.000	7.600	.	.	9.700	2.500
NOV	8.800	8.100	200.000	7.700	.	.	12.000	6.600
DEC	9.600	9.200	25.000	2.400	.	.	11.000	10.000

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
PESTICIDES & PCB								
ALPHA BHC (ng/L)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	.	2.000 <T	.	1.000 <T	.	.
FEB	.	.	.	2.000 <T	.	2.000 <T	.	.
MAR	.	.	.	BDL	.	BDL	.	.
APR	.	.	.	BDL	.	.	.	.
MAY	.	.	.	1.000 <T	.	.	.	BDL
JUN	.	.	.	.	.	.	.	BDL
JUL	.	.	.	1.000 <T	.	.	.	BDL
AUG	1.000 <T	1.000 <T	.	1.000 <T	.	.	.	BDL
SEP	2.000 <T	BDL	.	2.000 <T	.	.	.	.
OCT	BDL	BDL	.	BDL	.	.	.	BDL
NOV	2.000 <T	BDL	.	2.000 <T	.	.	.	2.000 <T
DEC	ILA	BDL	.	1.000 <T	.	.	.	1.000 <T
ATRAZINE (ng/L)			DET'N LIMIT =		GUIDELINE =			
JAN	.	.	.	BDL	.	BDL	.	.
FEB	.	.	.	BDL	.	BDL	.	.
MAR	.	.	.	320.000 <T	.	BDL	.	.
APR	.	.	.	BDL	.	.	.	.
MAY	.	.	.	BDL	.	.	.	BDL
JUN	.	.	.	.	.	.	.	BDL
JUL	.	.	.	BDL	.	.	.	BDL
AUG	BDL	BDL	.	.	.	.	.	.
SEP	BDL	BDL	.	IIS	.	.	.	.
OCT	BDL	BDL	.	.	.	.	.	.
NOV	BDL	BDL	.	.	.	.	.	.
DEC	BDL	BDL	.	.	.	.	.	.
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
PHENOLICS (UG/L PHENOLICS)			DET'N LIMIT = 0.2		GUIDELINE = 2.00 (A3)			
AUG	1.000	1.400	.	.	.	.	.	.
SEP	4.000	5.000	.	.	.	.	.	.
OCT	1.600	1.000	.	.	.	.	.	.
NOV	.800 <T	1.000 <T	.	.	.	.	.	.
DEC	.400 <T	.400 <T	.	.	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 2		SITE 3	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
	VOLATILES							
BENZENE ( )				DET'N LIMIT =	GUIDELINE =			
JAN	.	.	.	BDL	.	BDL	.	.
FEB	.	.	.	BDL	.	BDL	.	.
MAR	.	.	.	BDL	.	BDL	.	.
APR	.	.	.	BDL	.	.	.	.
MAY	.	.	.	BDL	.	.	.	BDL
JUN	.	.	.	.	.	.	.	BDL
JUL	.	.	.	BDL	.	.	.	BDL
AUG	BDL	.600	.	BDL	.	.	.	BDL
SEP	BDL	BDL	.	BDL	.	.	.	.
OCT	BDL	.150 <T	.	BDL	.	.	.	BDL
NOV	BDL	BDL	.	BDL	.	.	.	BDL
DEC	BDL	BDL	.	BDL	.	.	.	BDL
TOLUENE ( )				DET'N LIMIT =	GUIDELINE =			
JAN	.	.	.	.100 <T	.	BDL	.	.
FEB	.	.	.	BDL	.	.150 <T	.	.
MAR	.	.	.	.050 <T	.	.100 <T	.	.
APR	.	.	.	BDL	.	.	.	.
MAY	.	.	.	.150 <T	.	.	.	.150 <T
JUN	.	.	.	.	.	.	.	BDL
JUL	.	.	.	BDL	.	.	.	BDL
AUG	BDL	.150 <T	.	BDL	.	.	.	BDL
SEP	BDL	BDL	.	BDL	.	.	.	.
OCT	BDL	BDL	.	BDL	.	.	.	.050 <T
NOV	BDL	BDL	.	BDL	.	.	.	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
SITE			SITE 1		SITE 2		SITE 3	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
OEC	BDL	.100 <T	.	BDL	.	.	.	BDL
ETHYLBENZENE ( )				DET'N LIMIT =	GUIDELINE =			
JAN	.	.	.	.050 <T	.	BDL	.	.
FEB	.	.	.	BDL	.	.050 <T	.	.
MAR	.	.	.	BDL	.	.100 <T	.	.
APR	.	.	.	BDL	.	.	.	.
MAY	.	.	.	.050 <T	.	.	.	.050 <T
JUN	.	.	.	.	.	.	.	BDL
JUL	.	.	.	BDL	.	.	.	BDL
AUG	BDL	BDL	.	BDL	.	.	.	BDL
SEP	BDL	BDL	.	BDL	.	.	.	.
OCT	BDL	BDL	.	BDL	.	.	.	BDL
NOV	BDL	.050 <T	.	BDL	.	.	.	BDL
DEC	BDL	BDL	.	BDL	.	.	.	BDL
M-XYLENE ( )				DET'N LIMIT =	GUIDELINE =			
JAN	.	.	.	BDL	.	BDL	.	.
FEB	.	.	.	BDL	.	BDL	.	.
MAR	.	.	.	BDL	.	BDL	.	.
APR	.	.	.	BDL	.	.	.	.
MAY	.	.	.	.100 <T	.	.	.	.100 <T
JUN	.	.	.	.	.	.	.	BDL
JUL	.	.	.	BDL	.	.	.	BDL
AUG	BDL	BDL	.	BDL	.	.	.	BDL
SEP	BDL	BDL	.	BDL	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
OCT	BDL	BDL	.	BDL	.	.	.	BDL
NOV	BDL	BDL	.	BDL	.	.	.	BDL
DEC	BDL	BDL	.	BDL	.	.	.	BDL
O-XYLENE ( )				DET'N LIMIT =	GUIDELINE =			
JAN	.	.	.	BDL	.	BDL	.	.
FEB	.	.	.	BDL	.	BDL	.	.
MAR	.	.	.	BDL	.	BDL	.	.
APR	.	.	.	BDL	.	.	.	.
MAY	.	.	.	.050 <T	.	.	.	BDL
JUN	.	.	.	.	.	.	.	BDL
JUL	.	.	.	BDL	.	.	.	BDL
AUG	BDL	BDL	.	BDL	.	.	.	BDL
SEP	BDL	BDL	.	BDL	.	.	.	.
OCT	BDL	BDL	.	BDL	.	.	.	BDL
NOV	BDL	BDL	.	BDL	.	.	.	BDL
DEC	BDL	BDL	.	BDL	.	.	.	BDL
STYRENE ( )				DET'N LIMIT =	GUIDELINE =			
JAN	.	.	.	.200 <T	.	.200 <T	.	.
FEB	.	.	.	BDL	.	.350 <T	.	.
MAR	.	.	.	.250 <T	.	.650 UCS	.	.
APR	.	.	.	.050 <T	.	.	.	.
MAY	.	.	.	.250 <T	.	.	.	.450 <T
JUN	.	.	.	.	.	.	.	.100 <T
JUL	.	.	.	.150 <T	.	.	.	.150 <T

TABLE 5

ORINKING WATER SURVEILLANCE PROGRAM NORTH BAY WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 2		SITE 3	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
AUG	.150 <T	.150 <T	.	BDL	.	.	.	.100 <T
SEP	BDL	BDL	.	.100 <T	.	.	.	.
OCT	BDL	BDL	.	BDL	.	.	.	.100 <T
NOV	BDL	.250 <T	.	.100 <T	.	.	.	.050 <T
DEC	BDL	BDL	.	.100 <T	.	.	.	.050 <T
CHLOROFORM ( )				DET'N LIMIT =		GUIDELINE =		
JAN	.	.	.	52.200	.	42.100	.	.
FEB	.	.	.	43.200	.	43.900	.	.
MAR	.	.	.	47.800	.	46.900	.	.
APR	.	.	.	49.900	.	.	.	.
MAY	.	.	.	54.600	.	.	.	67.900
JUN	.	.	.	.	.	.	.	273.000
JUL	.	.	.	38.800	.	.	.	64.700
AUG	BDL	43.300	.	43.000	.	.	.	47.500
SEP	BDL	50.000	.	39.700	.	.	.	.
OCT	BDL	48.200	.	49.000	.	.	.	67.700
NOV	BDL	45.600	.	44.900	.	.	.	49.900
DEC	BDL	46.200	.	41.500	.	.	.	52.100
CARBON TETRACHLORIDE ( )				DET'N LIMIT =		GUIDELINE =		
JAN	.	.	.	BDL	.	BDL	.	.
FEB	.	.	.	BDL	.	BDL	.	.
MAR	.	.	.	BDL	.	BDL	.	.
APR	.	.	.	BDL	.	.	.	.
MAY	.	.	.	BDL	.	.	.	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 2		SITE 3	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
JUN	.	.	.	.	.	.	.	1.000 <T
JUL	.	.	.	BDL	.	.	.	BDL
AUG	BDL	BDL	.	BDL	.	.	.	BDL
SEP	BDL	BDL	.	BDL	.	.	.	.
OCT	BDL	BDL	.	BDL	.	.	.	BDL
NOV	BDL	BDL	.	BDL	.	.	.	BDL
DEC	BDL	BDL	.	BDL	.	.	.	BDL
DICHLOROBROMOMETHANE ( )				DET'N LIMIT =	GUIDELINE =			
JAN	.	.	.	5.050	.	4.600	.	.
FEB	.	.	.	4.400	.	4.600	.	.
MAR	.	.	.	5.250	.	5.000	.	.
APR	.	.	.	4.600	.	.	.	.
MAY	.	.	.	4.900	.	.	.	5.550
JUN	.	.	.	.	.	.	.	10.650
JUL	.	.	.	3.750	.	.	.	5.400
AUG	BDL	3.900	.	3.750	.	.	.	4.100
SEP	BDL	4.300	.	3.500	.	.	.	.
OCT	BDL	4.350	.	4.450	.	.	.	5.650
NOV	BDL	4.500	.	3.850	.	.	.	4.450
DEC	BDL	4.600	.	3.800	.	.	.	4.700
CHLORODIBROMOMETHANE ( )				DET'N LIMIT =	GUIDELINE =			
JAN	.	.	.	.300 <T	.	.200 <T	.	.
FEB	.	.	.	BDL	.	.300 <T	.	.
MAR	.	.	.	.600 <T	.	.600 <T	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
APR	.	.	.	.200 <T	.	.	.	.
MAY	.	.	.	.300 <T	.	.	.	.300 <T
JUN	.	.	.	.	.	.	.	.600 <T
JUL	.	.	.	.300 <T	.	.	.	.400 <T
AUG	BDL	.300 <T	.	BDL	.	.	.	BDL
SEP	BDL	.300 <T	.	.300 <T	.	.	.	.
OCT	BDL	.300 <T	.	.300 <T	.	.	.	.400 <T
NOV	BDL	.300 <T	.	.200 <T	.	.	.	.200 <T
DEC	BDL	.300 <T	.	.200 <T	.	.	.	.300 <T
T-CHLOROETHYLENE ( )				DET'N LIMIT =		GUIDELINE =		
JAN	.	.	.	BDL	.	BDL	.	.
FEB	.	.	.	BDL	.	BDL	.	.
MAR	.	.	.	BDL	.	BDL	.	.
APR	.	.	.	BDL	.	.	.	.
MAY	.	.	.	.050 <T	.	.	.	.050 <T
JUN	.	.	.	.	.	.	.	.150 <T
JUL	.	.	.	BDL	.	.	.	BDL
AUG	BDL	.100 <T	.	BDL	.	.	.	BDL
SEP	BDL	BDL	.	BDL	.	.	.	.
OCT	BDL	BDL	.	BDL	.	.	.	BDL
NOV	BDL	BDL	.	BDL	.	.	.	BDL
DEC	BDL	BDL	.	BDL	.	.	.	BDL
TOTL TRIHALOMETHANES ( )				DET'N LIMIT =		GUIDELINE =		
JAN	.	.	.	57.550	.	46.900	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM NORTH BAY WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 2		SITE 3	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	.	.	.	47.600	.	48.800	.	.
MAR	.	.	.	53.650	.	52.500	.	.
APR	.	.	.	54.700	.	.	.	.
MAY	.	.	.	59.800	.	.	.	73.750
JUN	.	.	.	.	.	.	.	284.250
JUL	.	.	.	42.850	.	.	.	70.500
AUG	BDL	47.500	.	46.750	.	.	.	51.600
SEP	BDL	54.600	.	43.500	.	.	.	.
OCT	BDL	52.850	.	53.750	.	.	.	73.750
NOV	BDL	50.400	.	48.950	.	.	.	54.550
DEC	BDL	51.000	.	45.550	.	.	.	57.050

TRACE LEVELS OF TOLUENE ARE LABORATORY ARTIFACTS DERIVED FROM THE ANALYTICAL METHODOLOGY.

TRACE LEVELS OF STYRENE ARE CONSIDERED TO BE LABORATORY ARTIFACTS RESULTING FROM THE LABORATORY SHIPPING CONTAINERS.

Table 6

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
BACTERIOLOGICAL			
FECAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	0 (A1)
STANDARD PLATE COUNT MEMBRANE FILTRATION	CT/ML	0	500/ML(A1)
TOTAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	5/100mL(A1)
TOTAL COLIFORM BACKGROUND MF	CT/100ML	0	N/A
CHLOROAROMATICS			
HEXACHLOROBUTADIENE	NG/L	1.000	450. (D4)
1,2,3-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,3,4-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,3,5-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,4-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,4,5-TETRACHLOROBENZENE	NG/L	1.000	38000 (D4)
1,3,5-TRICHLOROBENZENE	NG/L	5.000	10000 (D4)
HEXACHLOROBENZENE	NG/L	1.0	10. (C1)
HEXACHLOROETHANE	NG/L	1.000	1900. (D4)
OCTACHLOROSTYRENE	NG/L	1.000	N/A
PENTACHLOROBENZENE	NG/L	1.000	74000 (D4)
2,3,6-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,4,5-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,6,A-TRICHLOROTOLUENE	NG/L	5.000	N/A
CHLOROPHENOLS			
2,3,4-TRICHLOROPHENOL	NG/L	50.	N/A
2,3,4,5-TETRACHLOROPHENOL	NG/L	50.	N/A
2,3,5,6-TETRACHLOROPHENOL	NG/L	50.	N/A
2,4,5-TRICHLOROPHENOL	NG/L	50.	2600000 (D4)
2,4,6-TRICHLOROPHENOL	NG/L	50.	2000. (B4)
PENTACHLOROPHENOL	NG/L	50.	30000. (B4)
CHEMISTRY (FLD)			
FIELD COMBINED CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD FREE CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD TOTAL CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD PH	DMSNLESS	N/A	6.5-8.5(A4)
FIELD TEMPERATURE	^{o}C	N/A	<15 ^{o}C(A1)
FIELD TURBIDITY	FTU	N/A	1.0 (A1)
CHEMISTRY (LAB)			
ALKALINITY	MG/L	.200	30-500(A4)
CALCIUM	MG/L	.100	100. (F2)
CYANIDE	MG/L	.001	.20(A1)
CHLORIDE	MG/L	.200	250. (A3)
COLOUR	TCU	.5	5.0 (A3)
CONDUCTIVITY	UMHO/CM	1.	400. (F2)
FLUORIDE	MG/L	.01	2.4 (A1)
HARDNESS	MG/L	.50	80-100(A4)
MAGNESIUM	MG/L	.05	30. (F2)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
NITRITE	MG/L	.001	1.0 (A1)
TOTAL NITRATES	MG/L	.02	10. (A1)
NITROGEN TOTAL KJELDAHL	MG/L	.02	N/A
PH	DMSNLESS	N/A	6.5-8.5(A4)
PHOSPHORUS FIL REACT	MG/L	.0005	N/A
PHOSPHORUS TOTAL	MG/L	.002	.40(F2)
TOTAL SOLIDS	MG/L	1.	500. (A3)
TURBIDITY	FTU	.02	1.0 (A1)
METALS			
ALUMINUM	UG/L	.050	100. (A4)
ANTIMONY	UG/L	.050	10. (F3)
ARSENIC	UG/L	.050	50. (A1)
BARIUM	UG/L	.020	1000. (A1)
BORON	UG/L	.200	5000. (A1)
BERYLLIUM	UG/L	.010	0.20 (H)
CADMIUM	UG/L	.050	5.0 (A1)
COBALT	UG/L	.020	1000. (H)
CHROMIUM	UG/L	.100	50. (A1)
COPPER	UG/L	.100	1000. (A3)
IRON	UG/L	5.0	300. (A3)
MERCURY	UG/L	.01	1.0 (A1)
MANGANESE	UG/L	.050	50. (A3)
MOLYBDENUM	UG/L	.020	500. (H)
NICKEL	UG/L	.100	50. (F3)
LEAD	UG/L	.020	50. (A1)
SELENIUM	UG/L	.200	10. (A1)
SILVER	UG/L	.020	50. (A1)
STRONTIUM	UG/L	.100	2000. (H)
THALLIUM	UG/L	.010	13. (D4)
TITANIUM	UG/L	.100	N/A
URANIUM	UG/L	.020	20. (A2)
VANADIUM	UG/L	.020	100. (H)
ZINC	UG/L	.020	5000. (A3)
PHENOLICS			
PHENOLICS (UNFILTERED REACTIVE)	UG/L	.2	2.0 (A3)
PESTICIDES & PCB			
ALDRIN	NG/L	1.0	700. (A1)
AMETRINE	NG/L	50.	300000. (D3)
ATRAZINE	NG/L	50.	60000. (B3)
ALPHA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	700. (G)
BETA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	300. (G)
GAMMA HEXACHLOROCYCLOHEXANE(LINDANE)	NG/L	1.0	4000. (A1)
ALPHA CHLORDANE	NG/L	2.0	7000. (A1)
GAMMA CHLORDANE	NG/L	2.0	7000. (A1)
BLADEX	NG/L	100.	10000. (B3)
DIELDRIN	NG/L	2.0	700. (A1)
METHOXYCHLOR	NG/L	5.0	900000. (B1)
ENDOSULFAN 1 (THIODAN I)	NG/L	2.0	74000. (D4)
ENDOSULFAN 2 (THIODAN II)	NG/L	4.0	74000. (D4)
ENDRIN	NG/L	4.0	200. (A1)
ENDOSULFAN SULPHATE(THIODAN SULPHATE)	NG/L	4.0	N/A
HEPTACHLOR EPOXIDE	NG/L	1.0	3000. (A1)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE	
HEPTACHLOR	NG/L	1.0	3000.	(A1)
METOLACHLOR	NG/L	500.	50000.	(B3)
MIREX	NG/L	5.0	N/A	
OXYCHLORDANE	NG/L	2.0	N/A	
O,P-DDT	NG/L	5.0	30000.	(A1)
PCB	NG/L	20.0	3000.	(A2)
O,P-DDD	NG/L	5.0	N/A	
PPDDE	NG/L	1.0	30000.	(A1)
PPDDT	NG/L	5.0	30000.	(A1)
ATRATONE	NG/L	50.	N/A	
ALACHLOR	NG/L	500.	35000.	(D2)
PROMETONE	NG/L	50.	52500.	(D3)
PROPAZINE	NG/L	50.	16000.	(D2)
PROMETRYNE	NG/L	50.	1000.	(B3)
SENCOR (METRIBUZIN)	NG/L	100.	80000.	(B2)
SIMAZINE	NG/L	50.	10000.	(B3)
POLYAROMATIC HYDROCARBONS				
PHENANTHRENE	NG/L	10.0	N/A	
ANTHRACENE	NG/L	1.0	N/A	
FLUORANTHENE	NG/L	20.0	42000.	(D4)
PYRENE	NG/L	20.0	N/A	
BENZO(A)ANTHRACENE	NG/L	20.0	N/A	
CHRYSENE	NG/L	50.0	N/A	
DIMETHYL BENZO(A)ANTHRACENE	NG/L	5.0	N/A	
BENZO(E)PYRENE	NG/L	50.0	N/A	
BENZO(B)FLUORANTHENE	NG/L	10.0	N/A	
PERYLENE	NG/L	10.0	N/A	
BENZO(K)FLUORANTHENE	NG/L	1.0	N/A	
BENZO(A)PYRENE	NG/L	5.0	10.	(B1)
BENZO(G,H,I)PERYLENE	NG/L	20.0	N/A	
DIBENZO(A,H)ANTHRACENE	NG/L	10.0	N/A	
INDENO(1,2,3-C,D)PYRENE	NG/L	20.0	N/A	
BENZO(B)CHRYSENE	NG/L	2.0	N/A	
CORONENE	NG/L	10.0	N/A	
SPECIFIC PESTICIDES				
TOXAPHENE	NG/L	N/A	5000.	(A1)
2,4,5-TRICHLOROBUTYRIC ACID (2,4,5-T)	NG/L	50.	200000.	(B4)
2,4-DICHLOROBUTYRIC ACID (2,4-D)	NG/L	100.	100000.	(A1)
2,4-DICHLORORPHENOXYBUTYRIC ACID	NG/L	200.	18000.	(B3)
2,4-D PROPIONIC ACID	NG/L	100.	N/A	
DICAMBA	NG/L	100.	120000.	(B1)
PICLORAM	NG/L	100.	190000.	(B3)
SILVEX (2,4,5-TP)	NG/L	50.	10000.	(A1)
DIAZINON	NG/L	20.	20000.	(B1)
DICHLOROVOS	NG/L	20.	N/A	
DURSBAN	NG/L	20.	N/A	
ETHION	NG/L	20.	35000.	(G)
GUTHION(AZINPHOSMETHYL)	NG/L	N/A	20000.	(B1)
MALATHION	NG/L	20.	190000.	(B1)
MEVINPHOS	NG/L	20.	N/A	
METHYL PARATHION	NG/L	50.	7000.	(A1)
METHYLTRITHION	NG/L	20.	N/A	
PARATHION	NG/L	20.	50000.	(B1)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE	
PHORATE (THIMET)	NG/L	20.	2000.	(B3)
RELDAN	NG/L	20.	N/A	
RONNEL	NG/L	20.	N/A	
AMINOCARB	NG/L	N/A	N/A	
BENONYL	NG/L	N/A	N/A	
BUX (METALKAMATE)	NG/L	2000.	N/A	
CARBOFURAN	NG/L	2000.	90000.	(B1)
CICP (CHLORPROPHAM)	NG/L	2000.	350000.	(G)
DIALLATE	NG/L	2000.	30000.	(H)
EPTAM	NG/L	2000.	N/A	
IPC	NG/L	2000.	N/A	
PROPOXUR (BAYGON)	NG/L	2000.	90000.	(G)
SEVIN (CARBARYL)	NG/L	200.	90000.	(B1)
SUTAN (BUTYLATE)	NG/L	2000.	245000.	(D3)
VOLATILES				
BENZENE	UG/L	.050	5.0	(B1)
TOLUENE	UG/L	.050	24.0	(B4)
ETHYLBENZENE	UG/L	.050	2.4	(B4)
PARA-XYLENE	UG/L	.100	300.	(B4)
META-XYLENE	UG/L	.100	300.	(B4)
ORTHO-XYLENE	UG/L	.050	300.	(B4)
1,1-DICHLOROETHYLENE	UG/L	.100	7.0	(D1)
ETHLYENE DIBROMIDE	UG/L	.05	.05	G)
METHYLENE CHLORIDE	UG/L	.500	50.	(B1)
TRANS-1,2-DICHLOROETHYLENE	UG/L	.100	70.	(D5)
1,1-DICHLOROETHANE	UG/L	.100	N/A	
CHLOROFORM	UG/L	.100	350.	(A1+)
1,1,1-TRICHLOROETHANE	UG/L	.020	200.	(D1)
1,2-DICHLOROETHANE	UG/L	.050	5.0	(D1)
CARBON TETRACHLORIDE	UG/L	.200	5.0	(B1)
1,2-DICHLOROPROPANE	UG/L	.050	6.0	(D5)
TRICHLOROETHYLENE	UG/L	.100	50.	(B1)
DICHLOROBROMOMETHANE	UG/L	.050	350.	(A1+)
1,1,2-TRICHLOROETHANE	UG/L	.050	.60	(D4)
CHLORODIBROMOMETHANE	UG/L	.100	350.	(A1+)
TETRACHLOROETHYLENE	UG/L	.050	10.0	(C2)
BROMOFORM	UG/L	.200	350.	(A1+)
1,1,2,2-TETRACHLOROETHANE	UG/L	.050	0.17	(D4)
CHLOROBENZENE	UG/L	.100	60.	(D5)
1,4-DICHLOROBENZENE	UG/L	.100	1.0	(B4)
1,3-DICHLOROBENZENE	UG/L	.100	130.	(G)
1,2-DICHLOROBENZENE	UG/L	.050	3.0	(B4)
TRIFLUOROCHLOROTOLUENE	UG/L	.100	N/A	
TOTAL TRIHALOMETHANES	UG/L	.500	350.	(A1)
STYRENE	UG/L	.05	140.	(D5)